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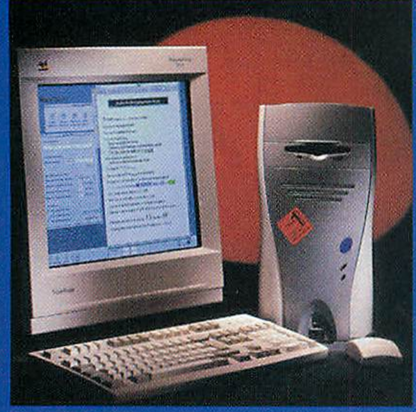




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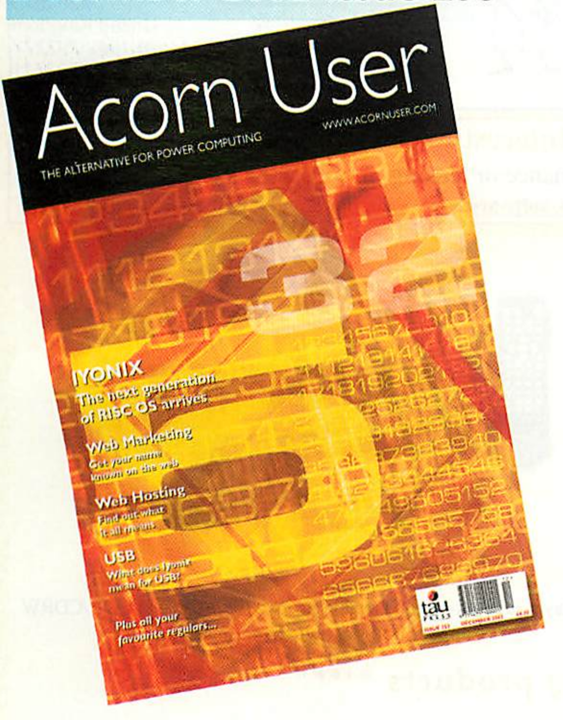
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Editor's Comment

I wonder how many people thought I was bluffing? Or possibly a silly optimist? Well there you go, a new machine. In fact more than just a new machine, a new operating system, a new design in fact.

Or is it a new design?

Now please understand that is is absolutely not a criticism because, frankly, this is the very best news we have had in over four years. I am so pleased that I'm grinning from ear to ear.

But I think I was commenting on the design. Let's look at what we've got: XScale processor (what's the speed on that? Castle aren't saying exactly but I do know that someone said "full speed" which means either 400MHz or 600MHz and nobody is going to get excited about 400MHz so I'll put my money on 600). USB, fine; PCI, okay; and podule slots.

Podule slots? Oh yes, for backward compatibility, of course. Come again? Backward compatibility? Does that make sense?

What have we got? We've got a 32-bit machine, not 26-bit. How many podules have been released recently? Two. One was a USB card (and this machine already has that) and the other was a network card from Castle. And this machine's already got that too. And all the other existing podule cards have 26-bit software in them so won't work anyway.

So why has this machine got podule slots, a 66MHz bus and why is it using a PCI graphics interface when PCI is old hat for graphics?

Well I won't claim that this is an original idea, and it may be one that has been mooted before but I think perhaps that this machine is more than just an Iyonix.

More like a phoenix.

Or possibly a character from Friends: After all what's in a name? Iyonix from Phoenix from Phoebe. Coincidence? Perhaps.

Then again, maybe we got what we were promised after all.

Rob Donaldson

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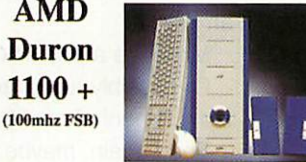
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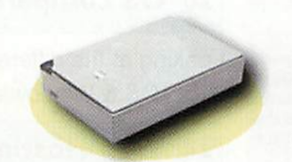
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Iyonix PC

Castle Technology Ltd has announced one of the biggest surprises in recent marketplace history: a new RISC OS PC running a 32-bit version of RISC OS (badged RISC OS 5) and containing an Intel XScale processor apparently running at full speed which means either 400MHz or 600MHz, the latter being the most likely in our opinion.

Details are still sketchy, as Castle are spoon-feeding us tit-bits of information at a time, however from the information we have received, the specification is at present looking like:

- New motherboard
- Intel XScale processor
- 32-bit RISC OS in Flash ROM
- Up to 1Gb of DDR memory
- PCI slots
- USB support
- UDMA100 hard discs
- Two high-speed Podule slots
- A new custom metal tower-format case
- Bundled software, converted to 32-bit

We are told that major developers in the RISC OS market have been working with Castle to convert their application to run in 32-bit mode and many will be ready by the time the new system is launched. No date has been announced as yet but I'm sure that Castle won't want to miss out on potential Christmas sales.

To coincide with the new announcement, Castle have made available an updated version of the Acorn Development Suite (C/C++ compiler, Toolbox, DDE and so on), which provides software developers with all that is needed to produce or convert software to run on the new 32-bit version of RISC OS. The new suite features:

- Updated C Compiler (C99)
- A licence to use tools libraries for commercial products
- Updated manuals
- Ideal for RISC OS 3.5 and above
- Produces faster run-time code
- Major bug fixes
- Extended compiler features
- For 26 & 32 bit versions of RISC OS

The compiler can be purchased direct from Castle or other Acorn/RISC OS dealers and is priced at an introductory price of £99+VAT.

This latest news is certainly most welcome, and has already started speculation on where RISC OS 5 has originated from and how this fits in with RISC OS Ltd and Select. However it's still early days, and I suspect there are a number of such issues which will become apparent of the coming months, it's certainly an exciting time!

Further details and a chance to win an Iyonix PC can be found on the Iyonix PC Web site www.iyonix.com.

No pricing details have yet been announced, but we at Acorn User expect it to be priced to directly compete with the Microdigital Omega.

By the time you read this, those who attended the Guildford show on the 2nd November should hopefully have been able to see the machine in action.



Aemulor

Coinciding with the announcement of Iyonix PC, details are emerging of new software emulator for RISC OS 5. The Iyonix PC contains an XScale processor, which will only run 32-bit software, and the majority of existing software is still 26-bit.

Hopefully, most of the software vendors will release updated 32-bit versions of their software, but there could potentially still be a lot of software that will never be converted if the developer is no longer in the marketplace, or the source code isn't available and as such these will not run natively on Iyonix PC. This has always been one of the major reasons not moving to a pure 32-bit operating system, lack of backwards compatibility.

Aemulor plan to solve this problem by allowing existing 26-bit software to be run under emulation on RISC OS 5. No details of compatibility, pricing or performance have been released, but keep a close eye on www.aemulor.com as using the excuse that "Iyonix won't be able to run my favourite applications" soon might not be a valid one!



Select release 2

If a new RISC OS machine and 32-bit version of the operating system wasn't enough, RISC OS Ltd has announced details of the next Select version.

Much of the focus of the Select 2 development has been focused around the enhancement of the graphical facilities of the operating system including:

- CMYK sprites are now supported
- Sprite, JPEG and DrawFile rendering may use 'colour mapping'
- JPEGs rendering system has been improved (including rendering of progressive JPEGs)
- Sprites may be rendered translucently (eg like DragASprite when dragging icons around)
- Sprite generation from PNGs
- The System sprite pool follows OS_ReadLine by moving out from the OS kernel

Select 2 now support's "wheel" mice, with changes in the kernel now which now issues additional requests to pointer devices to discover the state of such devices. Support for PS2 and quadrature wheel mice is provided.

Within the desktop, new flag bits and icon validations have been defined to allow applications aware of the this new interface to take advantage of the new input method. Toolbox 'Slider' gadgets and ColourPicker 'Slider' gadgets have been enhanced to support this also.

The Desktop and Window manager has been enhanced to provide some cosmetic improvements to the appearance of the desktop. These include:

- The colours to which icons now fade when disabled are now slightly different to those previously used. Disabled icons will now fade toward the background colour of the window, rather than toward white.
- The window furniture tools can be configured to use a different order to that which RISC OS has previously used. A simple configuration tool is provided within the Window configuration group.
- Text sizing of italic fonts has been improved to allow for the printable area to be determined for desktop fonts. Previously, italic fonts might be truncated by sizing routines using the standard operations.
- Text in filenames on icons is now sized correctly using the new Wimp_TextOp call above
- Reduced memory usage for selection of large numbers of files.
- Moving files on ImageNFS no longer faults directories
- Pinboard can use Drawfiles as background images.
- Some work has been put into improving networking, although the changes aren't as substantial as Select 1.
- Network operations have been improved to allow the automatic configuring of network interfaces. A new configuration command and a related option in the interface configuration tool have been added.
- A new 'ioctl' operation has been added to allow applications to flag changes on a socket when operations occur. This alleviates the requirement for additional shared code just to notify multitasking applications of activity on sockets.
- Authenticated shares were issued incorrectly

in Select 1. This fix allows objects to be shared using authentication.

• The Kernel has finally been updated with support for RiscStation hardware so that a single ROM image can be used across all hardware.

• The configuration tools have been updated to address a few issues raised in Select 1 and to provide the configuration of the extra facilities that Select 2 offers.

• Paint has been given a "major overhaul" in line with some of the graphics changes described above. Paint has been extended to use CMYK sprites and has improved PNG import capabilities.

• Draw can now use Control+D to 'duplicate' the current selection in a similar manner to the prior, non-clipboard, Control+C operation. In addition, Control+V now pastes the clipboard at the pointer, fixing a rather annoying fault in the previous version.

Full details of all the major changes in Select 2 can be found on the RISC OS Ltd Web site www.riscos.com including pricing details and how to subscribe to the Select scheme. An interesting point to note, especially for users with multiple RISC OS 4 computers is that a Select subscription is on a personal basis, and not machine basis.2

Exif Info

Another upgrade to EXIFinfo, the digital camera image utility has been release. The version now stands at 0.56, and the changes include:

• MakerNote information is now available for the following makes of camera: Canon, Casio, Fuji, Nikon, Olympus and Sanyo.

• You can now process a single image

• Change the characters which surround tags. This makes it easier to write scripts which generate RTF and DDF files (text with styles), which use braces for their own purposes. A simple example script is included, which can be loaded into EasiWriter/Impression and so on.

• The Help file has been split into two (Usage and Reference). The Reference section covers how to write scripts for the program, and is a separate download.

• User library extended

• Added #!Runnable, #!RunOnCompletion, #!FileDateFormat and #!EXIFDateFormat directives

• Added an Options file

• Menu selection now ticked, and stays open with Adjust

• Various other bug fixes and improvements

You can get the new version from http://www.photodesk.iconbar.com

Hopefully given the level of development and features, the program will soon progress from its ever "beta" status and actually reach version 1.0 !

USB storage

Weast Ltd are offering a range of USB flash memory storage devices that can store up to 1Gb of information on a keyring-sized device. Devices are available in 16, 32, 64, 128, 256, 512 MB and 1GB.

Given the number of machines which will soon have USB capability (Iyonix, Omega, Riscstation laptop, and the Simtec and Castle USB podule cards for the Risc PC) this kind of storage makes a fast, alternative to floppy discs, and can also provide an alternative backup solution if your data is less than 1Gb, as the cards have a data retention time of 10 years.

A standard USB mass storage driver is all that is needed to interface with these devices. For full details of their product line, and to purchase online, visit their Web site at:

www.weast.co.uk
or contact
Tel: 020 85689588
Fax: 020 85689908
email: mail@weast.co.uk

Midlands Show

The ARM Club are once again be running their popular Acorn Midlands Show at The National Motorcycle Museum near Birmingham. This year the show will take place on Saturday 30th November.

The venue is conveniently located just off junction 6 of the M42, at the junction of the M42 and the A45. A free minibus service is provided from Birmingham International station for anybody coming by train.

Exhibitors who have already confirmed that will be attending include:

Acorn User
APDL
Archive Magazine
Castle Technology
R-Comp/R-Comp Interactive
RISCOS Ltd
Serious Statistical Software
Soft Rock Software
Surftec
Zenta Multimedia

If you didn't manage to catch the Iyonix PC at the Guildford Show, this will prove an ideal opportunity to see one first-hand.

Further information can be found on the web at www.armclub.org.uk.



ARM cuts jobs

ARM is to cut 10 per cent of its workforce as it reports its first-ever fall in quarterly sales. For the third quarter ending 30 September 2002, ARM reported revenues of £33.3m, a drop from the £37.5m reported for the same quarter last year. The company also reported net income of £5.9m, a fall from the £8.8m made during the same quarter last year.

Earnings per share were 6p, down from the 9p per share to the end of September 2001.

ARM's weaker results and the state of the industry are the reason that the company announced that it was to cut its workforce by 10 per cent. "We believe that this level is more appropriate given the current industry outlook," an ARM spokesperson said.

Once completed, the redundancies will bring ARM's headcount from around 800 workers to 720 workers globally.

Shares in ARM fell sharply at the announcement, losing almost of their value, from 120p to 40p. They have since risen slightly to 55p at press time, which, given the infiltration of ARM processors into almost all mobile phones, PDAs and so on, must be an absolute bargain.

Meanwhile, at the Microprocessor Forum in San Jose, California, ARM and their semiconductor partners have been touting the first ARM cores to break the 1GHz barrier. Samsung released details of their ARM 1020E core running at a 1.2-GHz clock speed. The "Halla" processor consumes 1.7 watts at its peak speed but ratchets back to as little as 260 mW at 400 MHz.

ARM also released details of their ARM11 core, yet to be available in silicon, but containing a core that features an eight-stage pipeline and can run at 400 MHz with an incredible power consumption of less than 200mW.

These new releases from ARM Ltd now take on a real significance since with the launch of RISC OS 5 it will actually be possible to build RISC OS machines around new ARM processors.



Powerbase upgrade

Powerbase support provides some information on the latest version of the popular shareware database program.

The latest versions of Powerbase are as follows:

9.10 - The recently revised version of what was previously called PbaseDA. The recommended version for all users of RISC OS 3.5 or later. *Not* compatible with RISC OS 3.1.

8.33 - A bug-fixed version of 8.30. No longer being developed but still available for RISC OS 3.1 users.

There is a revised and extended manual for v.9.10 that incorporates all the extras in the supplementary manual and all the features exclusive to v.9.10. The tutorials have also been revised and the main tutorial considerably expanded to cover creating and altering a database.

Appearing for the first time is a demonstration of how you can add extra features to Powerbase and an explanation of how it's done. Works with both 9.10 and 8.33.

Powerbase can be used to create databases of information of almost any kind and provides powerful facilities for maintaining such databases and for selectively retrieving and printing information from them. Using Powerbase at an elementary level is particularly easy: you can, for example, set up a simple address-book database in a matter of minutes, yet the needs of more advanced users have not been neglected.

Descriptions of Powerbase from various sources have sometimes implied that it is a relational database. It isn't, but it can provide you with some of the facilities which fall outside the sphere of a simple flat-file (card index) type of database and for which a relational database program might otherwise be necessary.

It is best described as a flat-file database with table-validation. This means that text fields within the database can be linked to a list of items in such a way that the field will not accept items unless they are on the list. That list (called a validation table) can have many additional columns providing extra information that may be included in printed reports from the database if required.

http://www.pendle.ukgateway.net/

Virtual Acorn upgrade

VirtualA5000 version 1.3 has been released and can be downloaded by existing customers from the VirtualAcorn Web site.

This new "Laptop Friendly" version of VirtualA5000 includes support for integrated graphics cards as found on many laptops and some cheaper desktop computers. Previous versions of VirtualA5000 required the computer to have a powerful graphics card in order for VirtualA5000 to perform well.

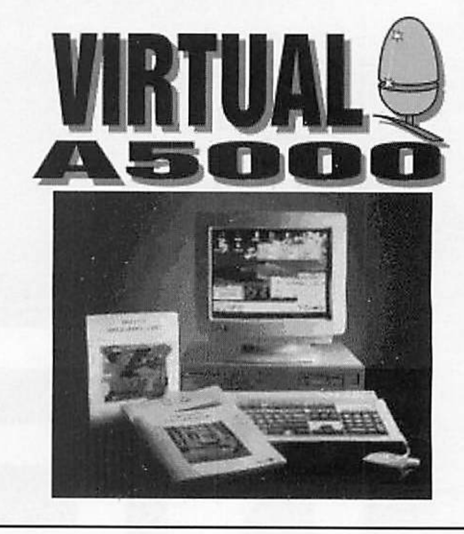
The new version has a software scaling mode that allows the PCs processor to perform the screen update, this offers a performance benefit on many machines. The hardware scaling model from previous versions can still be selected using the VirtualA5000 options window for those who have powerful graphics cards.

In addition version 1.3 includes a scrolling desktop feature that allows large RISC OS desktops to be displayed on smaller resolution displays. As you moves the mouse pointer to the edges of the screen the whole RISC OS desktop will move to track the mouse.

Sound system performance has also been improved on higher speed processors and long filenames are now displayed in the RISC OS filer, in addition to the long filename support which has always been present.

The new VirtualA5000 also has a smoother mouse pointer and supports some new display modes including 1400x520 (For Dell Inspirons and some other laptops) and 1600x600 for desktop machines. Version 1.3 also ships with the latest version of the ArcDisc Acorn format disc reader.

http://www.virtualacorn.co.uk



File searching

Two updates of utilities design to enable fast and simple searching for files and resources from your desktop.

Version 0.80 of Locate has now been released. Locate will match filenames using wildcards and will also compare size, age, type, attributes and contents.

Aside from the usual bug fixes, the main new features in version 0.80 are as follows:

- A full-info display option for the results window, showing object size, type, attributes and date; there is also an Object info entry in the results window menu.
- Modification date limits can finally be set by dialogue box as well as by typing the date in.
- Full support for the Theme Manager has finally been implemented
- Some of the internal changes required to support the new display mode were very significant and, as a result, the file format has been updated. Files from old versions of Locate will load into the new version, but this will not work the other way: files from 0.80 will be rejected by older versions.

Locate is released as freeware and runs on RISC OS 3.1 and later and has been tested on RISC OS Select. Full details of the new version and downloads can be found on the Locate Web site, at:

http://www.stevefryatt.org.uk/software/locate/

The second search tool to be updated is Textseek. Version 1.31 has been released with the following updated features:

- True case-insensitive searching, handling accented characters correctly.
- Internationalisation is now possible
- The search history menu is now preserved between sessions, allowing you to repeat yesterday's searches, very useful when working on a major project.
- The 'case-sensitive', 'whole word only' and 'wildcard' options for a given search are saved and restored along with the search history.
- Other major bug-fixes to the handling of the search history, which was introduced as a somewhat "beta" feature in the previous version, 1.26.
- Long-standing bug in machine code, which occasionally caused the program to hang up while scanning raw binary data, fixed.

Textseek is a fast text search program, which will search for a given (wildcarded) string through any type of file, and display its results in a throwback window, allowing you to see instantly which are relevant.

The found string is displayed in the centre of the window, no matter where it occurs in the paragraph, and all control characters are nullified before they crash the throwback handler. A whole list of filetypes to search and/or to exclude can be specified, and DOS, Mac, and UNIX line-endings are all catered for.

Text seek can be downloaded from:

http://www.bigfoot.com/~chrisbazley/utilities.htm#textseek

Mailscout upgrade

Following recent concerns that MailScout was agonisingly slow when scanning large mailboxes (containing several hundred e-mails) Image Software have released a new version (1.11) which deals with this speed issue and offers huge performance improvements over all previous versions. The upgrade has been dispatched to all registered users.

www.imagesoft.co.uk

Cybervillage URL expiry notice

The Acorn Cybervillage webmaster has asked us to inform people that the URL

www.cybervillage.co.uk/acorn/

which was changed to

http://acorn.cybervillage.co.uk/

Over a year ago will soon have its auto-redirection removed. Those who have not updated their links or bookmarks are advised to do so ASAP!

STem Version 2.02 Released

STem is an Atari ST emulator for RISC OS. Changes in this release include:

- optimised disk image access routines
- memory viewer with integrated disassembler
- use of Choices for storing configuration data
- tracing of processor execution

For further information and downloads: www.s-ellis.freeserve.co.uk/stem/

ROX-Filer 1.3.4

This new version contains a whole bunch of bug fixes and new features, to many to list here so see their Web site for more details.

ROX-Filer is a small, fast, powerful filer for Unix, Linux and compatible systems. Its user interface is based on the RISC OS filer, and it supports similar concepts, such as application directories, drag-and-drop saving and popup menus.

It also implements a RISC OS-like pinboard, and a panel that can be used in a similar way to the RISC OS iconbar. It also supports many features not found in RISC OS, including thumbnails of images, keyboard short-cuts, many more options, powerful search facilities, etc.

http://rox.sf.net/rox_download.php3



SuperFPEm version 2.33

SuperFPEm speeds up floating point operations on RISC OS. It supports StrongARM, ARM710 and ARM610. It doesn't support the ARM7500FE (A7000+, Riscstations, Mico and so on). It can be obtained from

www.toth.org.uk/~mech/

Other news

Ray gun drills concrete

Scientists have unveiled a space-age ray gun drill that uses microwaves to bore through concrete, rock or glass. The microwave drill has no moving parts and produces no dust or noise. It works by focusing microwave radiation at a spot just beneath the surface of the material being drilled. As the temperature rises, the surrounding material's ability to absorb the radiation increases. This triggers a runaway reaction, creating a hot spot. The material softens so the drill tip can be pushed into it, forming a hole. The drawback — The drill emits hazardous radiation.

The map, it's on your sleeve

By donning fatigues made out of special fabric and a pair of night-time goggles, soldiers could discreetly view detailed field maps as infrared images on the surface of their uniforms. At the University of Arizona, scientists are designing electronic pictures that can be printed onto flexible, organic nanofilm.

The process enlists a regular inkjet printer and a charged battery. The nanofilm is made out of layers of conduction polymer containing light-emitting polymers that glow green when excited by a charge.

The drawbacks: So far is that the map's not waterproof and, knowing this technology exists, surely the enemy only has to detect infra-red itself to fnd them?

Translating a baby's cries

When life reflects art, well the Simpsons anyway: A Spanish engineer has devised a gadget that can tell parents why their baby is crying. The device, which is the size of a calculator, translates the baby's cries, so parents know what's wrong.

A microchip monitors volume, pattern, and interval, to work out if the baby is stressed, tired, hungry, sleepy, or uncomfortable. Within seconds, a corresponding face lights up to tell parents what is wrong. The inventor spent three years visiting nurseries analyzing the crying patterns of babies.

On a similar but more canine theme..

A computerized gadget to help canine owners understand their dog's needs has proved an immediate hit after going on sale in Tokyo. "Bowlingual" comprises an 8cm microphone to be attached to a dog collar, which transmits sounds to a palm-sized console.

It then shows Japanese language phrases to fit the dog's emotional state, such as "I am sad. I want to play" and "I am super angry. I am going to explode!" Bowlingual is compatible with more than 50 dog species, from Chihuahuas to German shepherds, although we at Acorn User wonder whether Japanese dogs would speak the same "language" as English ones!

Battery powered by bugs and leftovers

A battery developed by British scientists that runs on scraps of food could help power your home. Inside the Walkman-sized battery, a colony of E. coli bacteria produce enzymes that break down carbohydrates, releasing hydrogen atoms.

The cell also contains chemicals that drive a series of redox, or reduction and oxidation reactions, stripping electrons from the hydrogen atoms and delivering them steadily to the fuel cell's anode.

This creates a voltage that can be used to power a circuit. Right now, the fuel cell, which costs as little as £10 to make, runs on sugar cubes, but the scientists aim to move on to carrot power. Move over Bugs!

Phone-controlled robot

Fujitsu says it has developed a walking robot that can be controlled by mobile phone. It's equipped with a remote control, camera, timer, and surveillance equipment. This allows it to take pictures and send them to the phone's screen.

The owner can move the robot around to check on certain parts of the house. Its infra-red remote control means it can operate air conditioners, televisions and VCRs. Fujitsu says the device has been developed to work with NTT DoCoMo phones, popular in Japan.

NTT DoCoMo has also developed technology that can turn the human body into a 10 megabits per second link. A device attached to a PDA can send and receive weak electrical signals through people, with human bodies as communications circuits. In this way, people can exchange e-mail addresses, names, and phone numbers while shaking hands.

The technology could allow data communications through doorknobs, switches, desks, and chairs. It could also get a computer to start up with the proper settings as soon as the user sat down.



LAUNCH DATE 2nd NOVEMBER 2002
CAMERA
DESK
HI-SPEED
CERTIFIED USB





Authorised
Installer

Behind The Mask

With more and more of us connecting to the Internet via networks and routers rather than with serial ports and modems, the black art of network address allocation comes into play. When we use a traditional modem, the PPP connection interface software usually does all the IP address negotiation and allocation for us when the ISP's remote modem answers.

When setting up your computer to connect to the Internet via an intermediate local network and gateway router, the allocation of private IP addresses and Netmasks can be very confusing. Although the latest RISC OS Select release contains the "Holy Grail" function DHCP (Dynamic Host Configuration Protocol), it is more suited to facilitate the connection of one RISC OS machine to a large network such as a university campus.

A simple example home network of two PCs and one Risc PC and an ADSL or cable modem/router is best given specific private IP addresses manually, from the official IANA (Internet Assigned Numbers Authority) range. These three private address ranges are:

10.0.0.0 - 10.255.255.255 (in CIDR notation 10/8)

172.16.0.0 - 172.31.255.255 (CIDR 172.16/12)

192.168.0.0 - 192.168.255.255 (CIDR 192.168/16)

To allow machines to be constrained to address each other only within these ranges or subnets, a binary "subnet mask" or "Netmask" number is specified whose value defines the number and range of different accessible addresses in the particular subnet.

So a 16 address subnet from 192.168.0.0 to 192.168.0.15 would require a subnet mask of 255.255.255.240. The 0s and 1s of binary notation show more clearly how the range of addresses are isolated by "masking" out with 1s all but the "last" four bits of the address, which specify the machine's actual address in the range 1 to 14.

255.255.255.240 = 11111111 11111111 11111111 11110000

The part of the address that is masked out is the "network number", revealing the "machine number" range in the bottom four bits. It's very important that all devices on a given subnet use the same subnet mask otherwise the wrong "network number" will be specified, and the rogue machine ignored.

One of the most understandable explanations of netmasking has recently been posted in comp.sys.acorn.networking by Eric Groenhuis. He explains: "192.168.x.y is a range of 255 private Class C networks, starting at 192.168.0.y and ending at 192.168.255.y, and with 'y' is the machine number part of the IP addresses. Because they are Class C networks, the minimal netmask for each network in that range must be 255.255.255.0.

"Note that a machine number of all bits 0 is reserved as a generic designation of the network, and a machine number of all bits 1 is reserved as the broadcast address of that network.

"Example: If you are using Class C network 192.168.123.x, mask 255.255.255.0, then the generic network number is 192.168.123.0, and the broadcast address is 192.168.123.255."

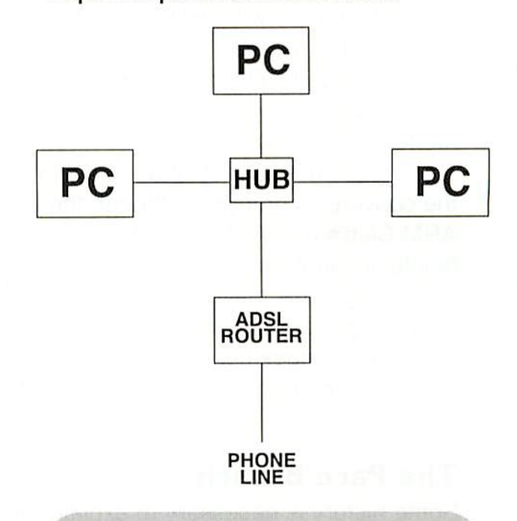
The Internet technical specification documents that cover this subject are RFC 870, 1166 and 1918 and these can be found at **http://www.armware.dk/RFC/**

The FAQs of Web Law

If you want to know more about something, the Internet is a great place to look for answers. When you've found what you're looking for, it's just so easy to copy it. But is it legal? Can you freely use something you've found as material for your own Web site? Can you scan any image for posting on the Web? Can you put an image link in your Web page that fetches an image from someone else's Web site?

These and other intriguing Web publishing questions form part of the Oppedahl & Larson Web Law FAQ, and I have made sure that the examples here are not exact copies of theirs! O&P are a US Law firm specialising in Intellectual Property law and are careful to state that their page does not give legal advice. UK law may operate differently, but as the Web is world wide, it makes sense to be careful.

Web Law FAQ
http://www.patents.com/weblaw.htm



David Dade
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In brief

Active or Passive?

A Broadband connection to the Internet allows speedy surfing and delightful downloading, but increases the possibility of port probes and virus vulnerability. A protective firewall between the big bad Internet and your prized computers is an essential element for these troubled times. However, the presence of a firewall can create problems as well as solve them.

Various applications running on RISC OS, Linux and Windows machines need to use ports that the firewall may block by default. One of these applications is File Transfer Protocol (FTP), used for sending and receiving files. Self-described as a "definitive explanation of Active and Passive FTP", Slacksite's document explains how FTP servers and clients deal with these two common FTP modes of operation in conjunction with firewall protection at each end of a link.

Active vs. Passive FTP
http://slacksite.com/other/ftp.html

Plain Facts

The plainfaqs.org site is intended primarily for Demon Internet users running the proprietary Turnpike software for Windows, but also contains other useful information for newcomers to Usenet newsgroups.

Following the guidelines to Network etiquette (Netiquette); how to conduct yourself when posting messages in the public Internet environment; will help you gain respect among your peers and avoid "flames" or online criticism or ridicule from some experienced and intolerant users.

The Which News Group FAQ explains the hierarchy of Demon's own newsgroups which are available worldwide on any ISPs news server that wants to carry them. For instance, I regularly read demon.service (Demon mail, connection and speed issues discussion) via my Pipex newsgroup server.

Plain FAQs
http://www.plainfaqs.org/

Going 32-bit

The Acorn C/C++ Development Suite from Castle Technology Ltd is a major update to the Acorn C/C++ that Acorn released in 1994. It includes new 32-bit versions of the C compiler, ARM assembler, linker and all of the other tools that were in the original C/C++ pack. More importantly it enables software to be ported to Castle's new 32-bit Iyonix PC ahead of its launch.

Acorn C/C++ cost £250 in 1994 and was supplied with four printed manuals totalling nearly 1400 pages and several floppy discs. Castle supply a single CD for £99 which contains the new software, the updated manuals in PDF format, and some useful public domain software including StrongEd, Zap, Perl and 32-bit Iyonix versions of Colin Granville's PDF reader and FTPc for transferring files to or from FTP sites. All of these are installed automatically by the supplied installer and work with RISC OS 3.10 onwards.

32-bit Mode

When Acorn designed the ARM processor back in the mid-80's it was widely regarded as an innovative and elegant design. One key feature was to combine the Program Counter (PC) with the Processor Status Register (PSR) into a single 32-bit register.

This had the benefit that the PSR could be saved automatically with the PC to achieve fast subroutine calls and quick interrupt response. The disadvantage was that '26-bit mode' limited the PC to a maximum range of 64Mbyte.

When the Risc PC was launched in 1994 it used the ARM6 processor which overcame this problem by introducing a '32-bit mode'. However, for compatibility with existing software, most of RISC OS and all of the RISC OS applications continued to use the old 26-bit mode and the new 32-bit mode was largely ignored.

The latest generation of ARM processors, including the Intel XScale used in Castle's Iyonix PC, only operate in 32-bit mode and no longer provide the old 26-bit compatibility mode.

The new Acorn C/C++ Development Suite enables programmers to produce 32-bit compatible software suitable for anything from a humble ARM2-based Archimedes running RISC OS 3.10 to the new XScale-based Iyonix PC running a 32-bit version of RISC OS.

Converting programs

Most RISC OS applications are written in BASIC, C or assembler. How should these programs be updated to work on a 32-bit computer?

Anything written in BASIC should work without any problem since it is an interpreted high level language which isn't translated into ARM machine code. BASIC programs that include assembler code will need the assembler sections updating as described below.

The vast majority of the commercial RISC OS applications are written in C. The good news is that C programs can easily be converted to run in a 32-bit environment by simply re-compiling them using the new C compiler and linking them with new 32-bit compatible libraries on Castle's CD. The new version will work on existing 26-bit versions of RISC OS as well as 32-bit versions of RISC OS so backward compatibility is assured.

Programs that use other compiled languages or libraries will also need to be re-compiled and linked against the new libraries. New 32-bit versions of the ABC BASIC compiler and UnixLib libraries are expected to be available soon.

Assembler programs are more complicated as they need to be modified by hand. In particular, instructions that manipulate the Processor Status Register (PSR) in 26-bit mode (such as MOVS PC, TEQP, LDM ^ and so on) will not work in 32-bit mode. If the code is only intended for ARM6 and later processors (ie RISC OS 3.50 onwards) these instructions may simply be replaced by the new MSR and MRS instructions.

If compatibility with ARM2 and ARM3 computers is required then more cunning code sequences are needed to achieve compatibility across the whole range of processors.

There is no easy way of automating the conversion process, although the ARM Club's free ARMalyser tool is helpful in identifying what needs converting. This may sound difficult but the changes are actually simpler than were the changes needed to make software run on the StrongARM when it was launched in 1996.

The Pace Branch

Some history is necessary to explain the background of the new C/C++ Development Suite:

RISCOS Ltd obtained a source code licence from Acorn in 1999 and took over development of RISC OS 4 and this version is what we see in modern RISC OS computers. Meanwhile Acorn (which became Element 14) and then Pace continued to develop RISC OS 4 internally for their Set Top Box products and the Bush Internet television.

These two branches developed in different ways: RISCOS Ltd added enhancements for desktop users while Pace made other improvements and converted RISC OS and its various modules to be 32-bit compatible.

The C compiler, tools, libraries and modules that Castle are now distributing are from the Pace branch and not from RISCOS Ltd. This is necessary to get 32-bit compatibility but it does mean that some of the extra features that RISCOS Ltd added to the toolbox modules, for example, may not be available in Castle's 32-bit versions. Developers need to be aware of this and ensure that their code does not use any of the features that are unique to the RISCOS Ltd modules.

What else is new?

You might be wondering how the new tools differ from the ones that RISCOS Ltd and Pace released 18 months ago. Although they are similar, the new tools have evolved considerably since that release and offer several new features as well as fixing a lot of problems, some of which affected the generation of 32-bit code.

The ARM Assembler supports all of the new ARM processors including the Intel XScale. A -cpu assembler option allows the target processor to be specified and the assembler will warn of any instructions which are unavailable on the specified processor. This is useful as you might want to specify the ARM2 as the target processor but use MSR and MRS instructions after testing for 32-bit mode. The assembler will warn when you do this, but still allow it, thus making it easy to write code which runs on both old and new processors.

Many of the other tools have been updated. The AMU Make utility has been improved significantly and now provides much of the functionality of the popular GNU Make tool including string manipulation operators. It also allows makefiles to include other makefiles and this is especially useful for managing large projects (indeed this feature is used to build RISC OS itself).

The C Module Header Generator (CMHG) now uses the C pre-processor. This allows C header files to be included so that symbolic names can be used rather than hexadecimal numbers. For example:

```
#include "window.h"
#include "services.h"
swi-chunk-base-number:
Window_SWIChunkBase
service-call-handler:
Window_services
Service_ModeChange
```

CMHG also sets the new '32-bit compatible' flag which is used by RISC OS 5 to identify and reject 26-bit modules.

C99

The original Acorn C/C++ software released in 1994 complied with the 1989 ANSI C (American National Standards Institute) standard which is usually referred to as C90 since it was adopted by ISO (International Standards Organisation) in 1990.

ISO have now produced a new standard for the C programming language which is commonly referred to as C99. It adds several new features which will be widely welcomed by C programmers, while maintaining backwards compatibility as far as possible.

C99 adds some new keywords and tightens some restrictions, so there is a small chance that old programs will generate some errors or warnings in which case a convenient -C90 flag can be used to make the compiler behave in accordance to the C90 standard.

The new C compiler generates faster code and implements many features from the new C99 standard but does not fully comply with the C99 standard. In particular it doesn't implement all of the new library functions, but it does implement most of the more useful features. The following should give a taste of a few of the improvements which are described fully in the new Acorn C/C++ manual included on the CD:

• 64-bit integers are implemented via the "long long" type. Long long literals use the LL suffix and they can be printed using the new ll format specifier:

```
#include <stdlib.h>
#include <stdio.h>
unsigned long long int MSB_set =
1ULL <<63;
printf("MSB_set is %lld in
decimal\n", MSB_set);
printf("or %llx in
hexadecimal\n", MSB_set);
```

• Statements and declarations may be interleaved, allowing declarations to be positioned to make code more readable:

```
foo(); int b = 5; bar();
```

• Loop variables may be declared in the "for" statement:

```
for (int i=0; i<10; i++)
```

• Variable length arrays, varying in multiple dimensions may be passed as function parameters:

```
void fred(int w, int h, char
d[h][w])
{for (int y=0; y<h; y++)
     for (int x=0; x<w; x++)
        d[y][x] ^= 0x80;}
```

• The last element of a structure may be an array of unspecified size and this is referred to as a flexible array member:

```
struct flex { int len; int
data[]; };
struct flex
*p=malloc(sizeof(struct
flex)+10*sizeof(p->data[0]));
for (int i=0; i<10; i++)
  p->data[i] = i;
```

Here the object pointed to by "p" behaves as if it had been declared as:

```
struct flex{int len; int
data[10]}
```

It is still the programmer's responsibility to allocate the necessary memory space correctly.

• The function "snprintf" prints a formatted string to a buffer like sprintf but take an extra parameter which specifies the size of the buffer:

```
char buffer[20];
len = snprintf(buffer, sizeof
buffer, "Result is %s", s);
if (len >= sizeof buffer)
printf("Buffer too small\n");
```

These are just a few examples - there are plenty of other improvements.

New modules

New 32-bit versions of the Shared C Library, Floating Point Emulator and other modules for distribution are supplied by Castle in a !System directory on the CD. The new Shared C Library is needed for any programs built to run in 32-mode (this is the compiler default) and any programs that use 64-bit integers or any of the other new C99 features or C99 library functions.

If none of these are being used there is no need to distribute the new C library with your application (as a general rule the new modules should only be distributed and installed if they are really needed).

Documentation

The original Acorn C/C++ pack included four manuals: Acorn C/C++, Desktop Tools, Acorn Assembler and User Interface Toolbox. The first three have been updated significantly with details of the new features, but the toolbox manual hasn't been updated for the first release.

The CD also includes the RISC OS 3 Programmer's Reference Manual, Volumes 1-5a which describes RISC OS 3.60, but not later versions.

All of the manuals are provided in Adobe PDF (Portable Document Format) and may be read using the latest version of Colin Granville's public domain PDF reader which is included on the CD. This works extremely well especially as it has been enhanced specifically for this project. In particular, PDF version 1.01.1.08.15 renders thin lines correctly and it even has the option to highlight cross-references in blue.

This is a very welcome feature as you can easily see the cross-reference links and click on them to jump to the relevant section. Even Adobe's own Acrobat reader cannot highlight cross-references in this way (unless the author has changed the style in the document, but then it cannot be turned off for printing). Clicking with Adjust causes a new PDF window to open allowing you to view several pages simultaneously.

The manuals can be printed single-sided or double-sided using !PDF but it is unlikely that many ink-jet users will print them in their entirety due to the cost. Castle may publish printed manuals in the future (at extra cost) if there is enough demand.

Conclusion

The Acorn C/C++ Development Suite is available now at the special launch price of £99 including VAT from Castle (this price will be valid until 31st December when the full price of £199 including VAT will apply). More details and on-line ordering form are on **www.castle.uk.co/castle/software.htm**

It enables software writers to produce 32-bit applications and it has already been used by several major developers to produce 32-bit versions of their software which run on the prototype Iyonix PCs.

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Operating System review

In this last article we looked at the functionality of RISC OS vs Windows, this time around we will take a look at more of the nitty gritty of functionality in the two operating systems.

Both operating systems are known collectively as WIMP (Windows, Icons, Menus and Pointer, some people have Mouse and Pull-down menus) systems, though this term has become disused on Microsoft Windows to be replaced with the term GUI (Graphical User Interface), of which RISC OS is also an example.

PC: The Windows operating system is stored on hard disc like a mainframe computer. This is a potentially dangerous state of affairs since accidental and malicious deletion or corruption of critical files is very easy. Windows NT occupies 84Mb of disc space. It is huge and bloated, each version taking up more space than the last one.

Because of the disc-based nature of the system you can get the ludicrous situation where there is a delay while a disc access occurs, just because you have moved the mouse.

Most PC text files have two new-line characters of Carriage Return and Line-Feed (CR - Carriage Return ASCII 13 and LF - Line Feed ASCII 10) at the end of each line which is a hangover from the old teletype terminals.

Windows also allows access to the original DOS prompt as available on pre-Windows machines, or provides an imitation of it. On some dialects of Windows (95 and 98) this option is executed by running DosPrmpt, on Windows NT the command is called CMD.

RISC OS was originally developed by Acorn Computers (as was the hardware, and ARM chips). Some of the functionality is identical to Acorn's BBC Micro and BBC Master computers, upon which the operating system had been based.

Rights to the RISC OS software were taken by Pace Microtechnology, and were licensed to RISC OS Ltd, who continue to develop RISC OS in a multitude of ways under the trade names of RISC OS 4 and RISC OS 4 Select. Now however Castle Technology have licensed the 32-bit version of RISC OS (developed by Pace) and dubbed it RISC OS 5. Though 32-bit it doesn't have all the enhancements that RISC OS 4 has received.

RISC OS is generally stored on ROM (Read Only Memory) chips, with the exception of RISC OS 4 Select supplementing the chips with additional updates on hard disc. RISC OS Ltd says on their Web site that RISC OS is stored on a 4MB ROM and that 46% of it has been written in C, 44% in ARM assembly code and 10% in BASIC.

The fact that RISC OS is installed on ROM makes it harder to pirate but, more importantly, you can't delete the files. To be fair many of the operating system modules are stored on disc, however even if they do get corrupted or deleted you can still get a working machine up and running.

Acorn text files are more efficient in only having one new-line character (LF - Line Feed (ASCII 10). Acorn's ADFS does contain a hexadecimal file dump program, *DUMP which PCs don't.

Start Up programs

Windows programs that should be run when the computer has loaded Windows should be put in the StartUp group under Windows\Start Menu\Programs\Startup (possibly under a user id profile if on a network machine).

With Acorn start up programs should be under the !Boot (Shift+double-click to open) Choices.Boot.Tasks subfolder. There's also a Library folder under !Boot, which can contain added system commands that can be run from the star commands prompt.

This system has been simplified under RISC OS 4 with a configurable system for deciding which programs to start-up with, and whether to just "boot" them or run them.

I did a short stint of work at the BBC TV Centre in London in 1999 and saw a lone Acorn Risc PC engaged in the job of video television editing. In this age of mass PC-popularity, it was very rewarding to see how well an old Risc PC was doing the job. The video motion seemed very smooth, too.

User interface

Windows has a task bar at the bottom of screen upon which buttons appear indicating running applications. Other installed programs appear in a box on the right hand side. Window's taskbar is functionally similar to RISC OS' taskbar (and I'm not sure if Microsoft copied this idea from RISC OS, it certainly looks like they did). The important icon on Windows is the "Start" button from which all software is initialised by selection from a menu is on the left hand side.

The key point with the Windows taskbar is that each item on the main section refers to a window, Windows does not distinguish between an application running and an application's windows, effectively the window is the application.

At first glance RISC OS systems look similar but the Acorn task bar only shows the icons of running applications, whether they have windows open is irrelevant. There is no feature equivalent to the Windows Start button as standard on RISC OS, though there are third party products which do similar functions, Paul Vigay's NeXTBar, for example. Programs are normally run directly from the Filer windows, or shortcuts can be set up.

Window handling

The control icons on Windows are all on the right hand side and are called Minimize, Toggle size and Close. The active window is always brought to the top, except when it isn't, which is potentially confusing. It also means that it is awkward to work in one window of one application while viewing another.

This is another hangover from the past when applications took over the whole machine and whole screen when they were being run. Switching to another application meant that it then became dominant. Windows has not lost this concept after 15 years although for inexpert computer users this can be helpful.

With RISC OS one can type in (say) an Edit window even with other windows on top. This is very useful for documenting something from another window, if a bit disconcerting for a Windows user. RISC OS window handling is far more flexible.

Clipboard

Windows makes widespread use of a clipboard facility that allows cutting and pasting from pretty much every part of every application. Its is a centralised clipboard control.

This facility is not available on earlier versions of RISC OS, however there is a protocol for it and programs which obey

the protocol can copy and paste between applications, this protocol is actually more versatile than Windows but few applications support it.

Drag and drop

Windows is very good with drag and drop and file handling, although the ability to drag and drop has actually existed since Windows 3. SoftEase used it in their first versions of TextEase for Windows. It can only be assumed that PC application writers never understood what Windows was capable of, it took a RISC OS programmer to use it to its full potential.

Nowadays it is used to good effect in the Explorer window where files may be moved by dragging and dropping. Files can also be copied by pressing Control before dragging and dropping. Limited drag and dropping is available from Explorer windows into open application windows, like Notepad.

On RISC OS, dragging and dropping is the norm rather than the exception. In the Filer (Acorn's equivalent of Windows' Explorer) dragging and dropping will, copy files rather than move them. If you desire to move files, rather than copy them, press Shift before dragging and dropping (the opposite of Windows Control+drag-drop for copying) this may seem confusing but the reason for the difference is this:

Windows (and Mac OS incidentally) both assume that if you drag a file on the same media, you want to move the file. But if you drag a file between media (from hard disc to floppy for example) you want to copy it.

RISC OS does not change the way it operates. Dragging between media is obviously a copy (as Windows agrees) therefore dragging on the same media is also a copy, there is no change in the way it operates. Adding Shift to the drag makes the difference.

RISC OS supports far more dragging and dropping facilities than those on Windows. Files can be saved from one application directly into another, effectively emulating the Windows clipboard.

Also files can be loaded into their application by dragging and dropping into their program icon on the task bar.

Andy Burgess

Window handling comparison

Activity*Activity*	**Windows action**
Activate window	Click anywhere on that window, it will come to the front.
Resize	Click on either of the sides, top or bottom of the window; or by clicking the icon (Alt-Spacebar) and select Size.
Move	Click-drag on title bar
Toggle Size	Click on the middle command icon on the title bar
Close	Click on the big X on the right hand side.
Scroll window	Click and drag with mouse, but don't drag outside scroll area or window will jump back to original position. Can also use wheel on a wheel mouse. Scroll arrows work in obvious direction as does clicking in the gap above or below, or left or right, of the scroll bar itself.

Activity	**RISC OS Action**
Activate window	Click in the window, window stays put in stack.
Resize	Bottom right, click and drag. Window comes to front with Select, or stays put in Window stack if Adjust is used.
Move	Click-drag on title bar. Window comes to front with Select, or stays put in Window stack if Adjust is used.
Toggle size	Top right icon. Small square indicates resized, large square full (or default) size. Window comes to front with Select, or stays put in Window stack if Adjust is used.
Close	Click the X icon, second from the top left. With Adjust parent window opens usually.
Back	Top left. Not available on Windows. This allows the current window to be put at the back of the currently open windows. In effect this is like reading through a sheaf of papers, and putting the latest read to the bottom of the pile. The window will hide behind any windows that overlap its area.
Scroll window	Click and drag the scrollbar, the mouse is constrained to the scrolling area only (can't wander outside it). Clicking scroll arrows or space outside the scroll bars with Adjust button reverses direction of scroll meaning you can scroll in either direction without moving the mouse. Scroll bar length is propor tional to the proportion of the window displayed compared to the full document size. Finally: dragging a scroll bar with Adjust allows completely free scrolling in any direction.

Moving, cutting and pasting text

RISC OS and Windows differ in their handling of text. This is due in part to RISC OS evolving from the way the BBC Micro handled text:

Description	**Windows**	**RISC OS**
Go to top	Control+Home	Home
Delete ->	Delete	End (obviously)
Delete <-	<- or Delete	Go to start of line
Home	Control+left arrow	
Go to end of line	End	Control+right arrow
Go top of document	Control+Home	Control+Up arrow
Go end of document	Control+End	Control+Down arrow
Delete to end of line	Shift+End & Delete	Select-click at beginning, Adjust-click at end of area
Move one word left	Control+left arrow	Shift+left arrow
Move one word right	Control+right arrow	Shift+right arrow
Page Down	Page Down	Shift+down arrow or page down
Page Up	Page Up	Shift+Up arrow or page up
Copy text	Control+C (copy text)	Control+C (Copy & paste immediately)
Paste text	Control+V (paste)	Control+V (Paste again)
Delete text	Control+X	Control+X
	Control+X	Control+U in dialogue box
Select all	Control+A	Control+A
Select text		Shift and cursor movement
Adjust-click	(text will be selected from cursor to place where	Adjust was selected)
Select line or paragraph	Shift+End (if at beginning)	Triple click
	Shift+Home (if at end)	Triple click
Undo	Control+Z	F8 (where available)
Unselect text	any cursor movement	Control+Z

What is Web hosting

The world of web hosting can seen a confusing place for businesses and individuals alike who are looking to have someone host their Web site. I hope to explain some of buzzwords and terminology used in this area and give some tips on what to expect and look for when choosing a Web hosting company.

Assess your requirements

Before you plunge in at the deep end decide on what you actually need from a host. Because of the vast number of companies, all offering slightly different packages and facilities, you could quickly become bogged down in the marketing hype and lose sight of what you are trying to achieve. Here are a few questions to get you started:

- Do I need a domain name? If so, what extension do I want (.com, .org, .co.uk and so on)
- What features do I need to host my site (do I need scripting to achieve special effects). This will also affect the next choice.
- Am I going to purchase Web hosting, or use the free space my ISP has given me. Remember that ISP-provided Web space rarely allows you to use CGI scripts or scripting such as PHP.
- If I am purchasing hosting, how much disc space do I need for my site?
- If I am designing a high performance site, can I make do with shared hosting or do I need my own server?

Let's look at some of the options available if you decide you just need basic Web hosting on a shared server.

Basic hosting

If you are looking to host just a single Web site, with perhaps some of the extras listed below, basic hosting would be your best option. Here you are allocated a fixed, or possibly unlimited, amount of disc space on a server shared by many other users and Web sites.

You will normally be assigned an FTP user-id and password that you use to access and update your site from your own computer over the Internet.

This kind of hosting is ideal for sites that may get hundreds of visitors or less per day, the prices are usually easily affordable and you are not paying for features you will never need or use.

There are no headaches such as management of the server, backups and so on as these are all taken care of by the hosting company.

Domain parking

If you have a domain name in mind, but no Web site to attach to it, you can register your domain and "park" it so that it's ready and waiting for when you do want to use it. Domains are often snapped up quickly, it's a good idea to register the name you want as soon as you've decided on it, or you may find someone else beats you to it.

E-mail aliasing

Most registrations give you "catch-all" e-mail forwarding which means that all domain e-mail sent to your domain address will be forwarded onto an existing mailbox you specify at registration time.

E-mail aliasing gives you more flexibility and allows you to direct e-mail to different mailboxes.

For example, you might want sales@yourdomain.com to be sent to your sales manager who uses Argonet as her ISP, and accounts@yourdomain.com to go to your accountant to uses Freeserve. Your hosting package may allow you to create a fixed number of aliases, or they may be unlimited.

URL forwarding

If you purchase a domain name without any hosting, when someone enters that in their Web browser (with the preceding www) it needs to send them somewhere, so most hosts include URL forwarding with their domain registrations. This auto-forwards the Web visitor to a URL you specify at registration time.

The advantage of this is that you can utilise free Web space provided by your ISP for your domain. The disadvantage is that visitors will see the URL they are being redirected to, which for a company or business doesn't look very professional. That is where the transparent forwarding below can come in useful.

Transparent forwarding

If you are using URL forwarding without any hosted Web space, some hosts allow you to hide the URL that your Web visitors are forwarded to. There are several ways of achieving this. One is to use a 100% page-sized FRAME element inside an index page on the hosts own Web site, which displays your redirected Web site inside of it the FRAMESET element.

This method has the disadvantage that you cannot quote sub-URLs such as **http://www.your domain.com/info/** as the sub-folder will not exist on the Web server as only the index page will be present on that server.

Web stats

So that you can monitor who is visiting what pages on your Web site, most hosts offer some kind of Web statistics and monitoring software which can provide that information. There are also many free stats services on the Internet that just require a link placing on your homepage and can record all sorts of information about the visitors to your site.

See **www.extremetracking.com** for an example of a free site statistics monitor.

CGI-BIN

These are utilities or scripts that can be called from your HTML to provide more interactive features. Use of CGI-BIN is slowly decreasing with the advent of server-side scripting such as ASP and PHP.

There are two things to look out for with CGI: firstly, are there any basic CGI programs included with your hosting? An example of this might be a response form CGI script that takes the response from an HTML form and e-mails it to a set address. The second thing is whether you can download and/or write your own CGI scripts to use in your Web space.

CGI scripts are usually written in PERL and require special "execute" rights on the Web server, so you cannot just download them into you Web space and expect them to work correctly.

PHP

PHP is a powerful scripting language which can be used to add interactive and dynamic content to your Web site.

PHP provides many functions to automate quite complex tasks. Examples are:

- Sending e-mails from Web pages
- Creating images and PDF files
- Communicating with databases (eg. MySQL)
- XML functions
- String and numeric manipulations

The big advantage of PHP is that it is what's known as a "server-side" scripting language, which means that its totally browser-independent as all the code is executed on the Web server and the

results can be displayed in pure HTML giving the widest range of browser compatibility.

This is in contrast to something like JavaScript, which requires browser support to function correctly.

Another advantage of PHP is that it is cross-platform, and is available for both Unix and Windows-based Web servers.

See **www.php.net** for more information.

ASP

ASP (Active Server Pages) is Microsoft's version of a server-side scripting language. The language closely resembles VBScript, which in turn is a cut-down version of Visual Basic.

Although ASP is available for Unix and Linux Web servers, full performance and compatibility can only really be achieved by using a Windows-based Web server (ie Windows NT, 2000 or .NET)

See **http://msdn.microsoft.com/** for more details of the ASP language.

Front Page Extensions

Front Page is a Microsoft software package, which aims to simplify the creation of Web sites. It does this by using its own set of scripts to provide interactive content, but to run these scripts on a Web server, you need to have the Front Page Extensions installed and running.

Given Front Page has traditionally produced quite non-standard HTML, and companies often charge extra for inclusion of these extensions, I recommend avoiding it where possible, and if you need to add interactive features to your site, use PHP or ASP.

SQL Database

If you wish to store information to be used by your site, you will need some kind of database. While flat files may be suitable for very small sites and amounts of data, using a SQL server is much more reliable and scalable, and also has built-in support from the popular scripting languages such as PHP.

One of the most popular SQL servers is MySQL, a free, open source implementation of the SQL language, which can be run on both Linux and Windows-based Web servers.

Typical uses for a SQL database would be to store a large database of products for an online shop, or perhaps usernames and passwords if you have a membership area of your Web site.

Administration of the SQL server is done via the command line (via telnet or ssh) or via a one of the free Web interfaces such as phpMyAdmin.

See **www.mysql.com**

Control panel

If you require complete, Web-based control of the e-mail and Web forwarding of your domain, you should look for hosts that offer a Web-based control panel. These allow you to change the e-mail forwarding, URL forwarding and view items such as Web and bandwidth stats.

Reseller package

If your business means that you are likely to manage many clients or Web sites, you may look into a reseller package. These give you a delegated control of a group of domains and Web sites. Many also offer discounted domain registration, and discounted on hosting packages that you can offer your customers.

This is part of the Virtual ISP package that some companies offer which allow you to become an ISP, complete with dial-up Internet access, without having to buy all the hardware that goes with it.

Server options

If you find that basic hosting doesn't really suit your requirements, or the Web site you are running requires more capacity than a shared hosting environment can provide, you have several other choices.

Co-location

If you have your own server hardware that you have purchased and need to connect it to the Internet, then you will need a co-location facility in which to host your server.

At a minimum, Co-location provides you with an amount of space in a cabinet or rack (depending on the type of server), power supply, and a network connection to the Internet.

The cost for co-location usually is based upon a set base rate, and there is a scale of charges for bandwidth applied on top of that.

Bandwidth is usually purchased using two different methods. One will be a cumulative total per month, so if you will pay whatever charge that your site visitor's transferred during the month (for example 5Gb). The other method is you pay for a specific bandwidth-limited connection e.g. 128k, and that is the maximum bandwidth available to your site at any one time.

Other options that may be available, either included in the basic package, or as chargeable extras are:

- Remote reboots allow you to restart your server remotely
- Backups give managed backup and restore facility
- Site access gives you physical access to your server. Check the times they allow this (it may be limited to 9-5 working hours only) and what security they have in place (Smart card, biometric and so on)
- Multiple IP addresses, if you have several network cards in your server, you will need an IP address for each one. You often only get one or two by default, other are usually extra.
- 24-hour telephone/e-mail support, if there is a problem with your server or the co-location facility, you will need some kind of support to identify where the problem lies.
- Firewall: Some co-location facilities allow you to place your server behind a firewall to stop unwanted traffic reaching your server. If your server is going to store confidential or highly sensitive information, you may wish to consider this to minimise the security implications of having it attached to the Internet.
- DNS: If your server will need to resolve other Internet hosts (perhaps it is providing e-mail services which need to relay e-mail to other servers on the Internet) you will need a DNS to be able to resolve the other domain names into their IP addresses. Most co-location facilities have their own DNS servers that you can use.

Virtual/Shared hosting

If you are looking to host a site or a number of Web sites, and would like more control over the server it's running on, virtual server hosting could be an option.

A virtual server appears to the user as a complete stand-alone server, and you get telnet or ssh (secure shell) access onto it to perform installations, reboots, configuration changes and so on. However, it is actually a "virtual machine" (VM), with several other similar VMs running alongside it on the same physical hardware.

Virtual servers are ideal for those with a little knowledge of the operating system (most often some Linux variant) and who likes more control over their server.

Most Virtual Server hosts provide some kind of control panel interface (usually Web-based) to ease the burden of administration.

Virtual Servers let you control most of

the configuration aspects of your server, include DNS zone files, Mail server configuration, Web server configuration and additional software that may be installed such as MySQL databases or mailing list software.

Because these configuration options are available for an administrator to change, it is also easier to cause serious problems if you make any mistakes or delete something by accident, so be very careful when making any kind of configuration change on a virtual server.

Dedicated servers

If you have a Web site, or sites, that you expect to get many thousands of visitors per hour, and which also might have complex back-end requirements (databases or transaction processing for example) you may opt to have your own server, dedicated to your site(s). This will not be shared by anyone else, and thus all the capacity of the server is available to you.

Dedicated servers are often "managed" by the hosting company, which means they look after the underlying operating system, connection to the internet, backups and so on, although it is worth making sure that you understand what is covered and what isn't. The list of "optional extras" will be very similar to those available to co-located servers above.

The aspects of what can be configured are similar to those for Virtual Servers, but a dedicated server would also let you have a lot more freedom over what is installed and running on your server

Costs

The costs vary considerably across the industry, and do depend on what is included in the respective packages. To give you an idea of the price ranges, here are the above server options and some guideline price brackets so you can see how they are positioned in the marketplace:

Basic Hosting
£20 to £200 per annum depending on disc space and features

Virtual hosting
£300 to £2000 per annum depending on features, number of domains hosted, and you bandwidth and disc space requirements

Dedicated Server
£800 to £2000 per annum depending on hardware specification and bandwidth required

Co-location
£500 - £2000 per annum (excluding cost of your own server, which may be many tens of thousands of pounds!) dependent on bandwidth requirements and features offered.

As you can see, the number and range of features and options when looking for Web hosting are vast, but I hope you are now better positioned to make an informed choice when looking to host your Web site, large or small.

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www.spellings.net

Web site promotion

Acorn User have asked us, a Web site promotion company, to give some insight into the Web promotion business. If you want to read this and expanded details on line, we have compiled a Web page with the resources mentioned here, please see the end of the article for further details.

Web site promotion began for us a few years ago with the advent of our first Web site client who, we very quickly found, believed that he should be getting huge amounts of business from his Web site just because it was there. Because we had designed his site he felt that part of this was to bring him vast amounts of visitors also and we were forced to respond to this in an attempt to cater for his needs. Very quickly we learnt to distinguish between a Web site design job and Web site promotion which is an important lesson for anyone who is going down this path who particularly cares about (or needs) visitors to his Web site.

The first thing to remember about Web sites is that there are an awful lot of them out there. Take any typical search term and look at the number of potential Web pages that match your term and you will often find many thousands if not millions of pages listed. Google (one of the popular engines) searches a database of over two billion pages to bring you results.

I won't go into statistics here but suffice it to say that unless your Web site is in the top thirty results, visitors are going to be few and far between if you rely on search engines to serve your site to a potential customer or visitor. Indeed if you really want visitors to get to your site by using a search engine you really have to be in the top ten results for a particular search to gain meaningful numbers.

Is Web site promotion worth it?

A Web site can produce real, quality leads for your business and should not be ignored. Correctly promoting the site brings you visitors who would not normally have seen your company and more importantly are actively searching you out to buy your product or service. Not only that but often once you are getting visitors the numbers will stabilise and you have an ongoing largely free promotion of your company.

Bulk e-mail notifications: Many of you will find huge amounts of e-mails falling into your in tray. These are generally unsolicited, although many claim to have been because you subscribed to a mailing list, probably in the hope that you won't remember not doing so. What do you do with these? If you are like me they get deleted the moment I have read the title in most cases. Unless I see that someone has spent some time personally on the e-mail I treat it like junk mail coming through the front door and recycle it.

A simple rule I use about bulk unsolicited e-mail is "not to do it". It is annoying and a very hit and miss way of creating customers. You are missing the beauty of the Web if you carry out such a process because there are millions of people out there trying to find your site and all you have to do is give them a path to it. If you send spam you are largely wasting your time.

Trends towards farming e-mail addresses off Web sites are making this a more common phenomenon and all the more annoying as you get several duplicate e-mails saying the same thing based upon your Web site address.

A more worrying thing as a Web site promoter is that if you carry out this process you are running this risk of action against your company from disgruntled recipients of your e-mails. Not only that but Web site hosts will often ban you from using their facilities if you carry out bulk mailing as it can potentially cause them legal problems and get them penalised by search engines as a provider of spam mail facilities, thus affecting all of their other clients.

Looking at terms of many affiliate programs you will find that they absolutely demand the avoidance of using spamming to promote their product.

Instead, you should be trying to establish pathways to your site. How much better to get someone to find your site, by themselves, when they actually are looking for your product or service, rather than clogging up their in-tray and annoying them, together with the other thirty unsolicited e-mails that day.

Newsgroup announcements: There is no harm in making the occasional announcements on newsgroups provided you follow the etiquette of that particular group. In short, don't spam the group (repeatedly announcing the same thing over short intervals), keep the announcement relevant to that group and tailored to the particular set of people. Do not announce in groups where you are off topic, or if the group doesn't ever have commercial announcements and you are selling. Take time to read other announcements and if you don't fit in then don't do it. The more relevant groups are often moderated and therefore you will need to pay particular care to make sure you are fitting in to get your Web site announced there.

In my experience, by far the best way to get a steady stream of relevant visitors to your site is to carry out sensible Web site promotion techniques.

How do you get your site to the top ten on a search engine? And am I really about to tell you how?

For the purposes of this article I may sometimes use the phrase 'search engines' as a generic term for search engines like Google and directories like Yahoo. The distinction is becoming less obvious anyway as Yahoo (a directory) serves up answers using Google when it doesn't have any matches and Google (a search engine) uses directory results from DMOZ for its directory section. Many search engines also have a comprehensive directory structure these days.

Registering

The question we always get asked is how can people get on the search engines and nine out of ten times

people mistakenly think that simply by registering their site and keeping registering their site they will get a good response. This simply isn't so. Of course you need to be on a search engine in order to be found but once you are there, provided you don't infringe some rule of the search engine and you keep your pages up to date, fast loading and always available it is unlikely that your main concern will be whether you are still on the engine.

There are many adverts for the registering of your site with x thousand search engines a week but how many search engines can you name? It would be a fair bet that you will come up with the following list (give or take a few): Yahoo, MSN, AOL, Altavista, Lycos, Ask, Google, Hotbot.

Given this fact, it is easy to see that you are naturally less likely to visit many of the others that form the bulk of what these registration companies claim to be thousands of search engines. In fact there are really around twenty top search engines that you need to worry about and the rest should gradually fall into place over time.

Many of the other engines either have much lower traffic and should be lower down your list of priorities or else will gradually take on the databases of the other search engines, so if you concentrate on the larger ones, you will find yourself in many of the other search engines also.

How many of you spotted some of the other important ones that I missed? DMOZ, The Open Directory Project have a small percentage of Internet traffic but its results are extremely important in weighting the answers of many other engines because it is hand-reviewed and free to apply so it is a quality issue as to whether you get in, not a payment one. Looksmart powers the top answers to many of MSN's results and Inktomi fills in many of the others where Looksmart doesn't provide the answers.

Inktomi serves many search engines with data from its database and so registering with this is very important. You can do so by submitting your site through Hotbot, however this is not guaranteed. If you want to get into Inktomi, you can pay to do so (and be on MSN within seventy-two hours). Again, you can get onto Looksmart free but to be sure you need to pay for inclusion in their directory.

If you purchase inclusion (around £30 for one page), Inktomi is extremely useful for testing search phrases quickly and finding what actually gets you to the top of the searches and what produces results (people visiting).

So you are on the search engine, what next?

As we said at the beginning of the article, getting on the search engine is only one stage. Once you are on the search engine how on earth do you get to the top ten?

What you first have to do is ask yourself what getting in the top ten means? You have a product or service to sell or a Web site to share information about your interests. Do you think that people are going to type in your domain name to a search engine in order to get there. No, (unless you are well known) they will use a search word or phrase and if your site doesn't match that you will not show up in their results.

Be specific. For example you sell doors on the Internet. You think that someone is searching for 'doors' and therefore you must be at the top for 'doors' in www.google.com and you spend all your effort trying to achieve this.

If you try this search on www.google.com, you will find 6.4 million other sites relating to 'doors'. Yes, someone has to be top but you do need to reduce your competition. Think about this also, if you search for doors, you might actually be looking for the pop group. People using the search engines quickly realise that they must use more than one word to find what they are looking for, for just this reason.

It is much better then, to try to achieve top ten placement for a more unusual phrase. Try 'bathroom doors' on Google.com and you will find that suddenly there are now just over 600 thousand sites and therefore it will be easier to get to the top ten. Add in a 'uk' to the end of that takes you to only 68 thousand sites available. If your product is specialist or on sale in a limited geographical area, being specific will also provide you with much more defined hits that are more likely to result in an order or request for quotation.

Don't guess what people are searching for. The other problem is that as potential visitors are not likely to already know who you are, you have to know what they will search for. You can guess but this is likely to lead to failure unless you are lucky.

A good example is with a recent customer of mine who sells water softeners on the Internet. He thought that he would like to be top for 'limescale removal' on the Internet and on the face of it, this would seem a good guess. However, upon investigation we found that even an unusual phrase such as 'consumer reports on water softeners' was searched for many more times a day than his guess of 'limescale removal'.

Getting a top ten position for a phrase is hard work so don't waste your time on phrases that will only bring in small numbers of hits once you get to the top.

Luckily, there are utilities available for finding just this and it is one of the most valuable assets in your Web site promotion strategy by taking away the guess work and actually knowing what people are searching for.

Not only that but you can gain statistics for how many times a search phrase is used on an average day and how many sites there are competing with you should you wish to try for a top placement. A good measure (should you wish to do this manually) is to add quote marks around a phrase for an exact search of a phrase. Blue secondhand cars will bring up any sites that have any of these words in, but "blue secondhand cars" will show you how many sites actually have that phrase on their page somewhere and these are the ones that you are most likely to be competing against.

What is next?

You know that a phrase is popular having found the statistics and you know that there are few competing sites. How then do you make your

pages top in the searches?

Site structure: Avoid the more common pitfalls such as using frames for your site. The search engines will often be unable to spider (look through) all of the pages, as frames, by their nature are difficult to follow by page links. Use tables instead.

Don't use all graphics on your page. This will slow things down and text is key for search engines, they cannot read text in graphics.

Dynamic (database-driven) sites are often a problem for search engines and will prevent a search engine from looking right through the site. However, rules vary with different engines so you will need to look at each individual case, as there isn't enough space here to list them.

Links on the site need to be correct and lead to all pages (and back again) in order for a search engine to find all your content.

Content: Content is key to your getting into the search directories, who often hand-review your site. Someone looking at your site must therefore see that it has some worth and is informative, complete and has no broken links. Make absolutely sure your site follows this rule or you will be fighting a losing battle.

Spamming: Avoid too many uses of the key phrase that you are aiming for. Use proper sentences and not just repetitions of the same word or phrase in order to get people there. Overuse of a keyword or phrase may actually damage your position. Some sites try to hide repetitions of words in the same colour as the background of the site. This is definitely a no no as you will be penalised by some search engines who can detect this.

Spamming also covers the use of off-topic words to gain visitors to your site. Using popular words just to attract visitors to your site, which is nothing to do with that word will probably result in that person just hitting the back button on their browser and immediately leaving your site. What's more they may avoid your site if they actually do find you again.

Some sites try to be clever and use Javascript to push you on to the real page from an optimised one but this is also penalised in certain cases.

Producing correct pages

There is no great secret to this. Produce a Web page that says what you do, has informative text, correctly spelt and correct links throughout the site. Then, when you have done this think about promotion of the site.

Only when you are ready and finished with your pages start to register with the directories such as DMOZ.

Although auto-registration facilities are useful, hand register with the top 10 or so search engines, do not just use automatic registration. In some cases, such as Altavista you must use a code which they display as a graphic before you enter your site, so it is difficult to see how registration automatically can possibly be happening. In my mind, it is too important to get into the top ten or so search engines to leave this to an automatic facility.

Your pages complete, and the registration process underway, it will be days, weeks or even months for some search engines to spider (go through) your pages. You can now be looking at how the keywords that you have found fit within your pages to produce the best results. In order of importance, in my experience are the following:

Title meta tag: The page title is undoubtedly used by many engines as the most important attribute of the page itself. Include the keywords or preferably phrase within the title as close to the front as possible. Keep the title brief and descriptive.

Body text: The keywords should appear throughout the body text. Again, keep your favourites near the top and in headings but used meaningfully within the page as a whole.

Keyword meta tag: Less important than many people think (some engines ignore this altogether), this area is often abused to show off subject text to get visitors. You should instead use this to colour the page with related words around your subject. As an example if you sell cars, you could add phrases such as the makes you sell, geographical areas you cover, and related things like 'car warranty', 'free car insurance' and so forth.

Description meta tag: This is not always used by a search engine but where it is it forms the 'tag line' to your title, filling in your sales message that they will see when your result gets displayed. Again, keep it succinct and designed to encourage the visitor to you and not to another site. Although keywords are not necessarily considered important by search engines within this, the description should cater for the customer you want and should not be ignored.

Where else can you put keywords? Always make sure you have suitable phrases as 'alt text', the alternative text behind an image. This is good practice anyway, as it allows people to click on a link if the graphic is not loaded yet to tell them where to go.

Keywords can also be include in links to other pages on your site, 'title' tags for text, cascading style sheet names, and even comments within the page, although it is doubtful whether either of these last two help a huge amount.

All things being equal, the domain name can be of importance. Keywords can be included in domain names i.e. **www.carsales.co.uk**, sub-domains such as **www.secondhand.carsales.co.uk** (where secondhand is the subdomain) and in the page name itself, for example **www.carsales.co.uk/secondhandcars.html**. It is also better practice, we have found, to split the keywords up so we would prefer to purchase **www.car-sales.co.uk**, over **www.carsales.co.uk** and you would split the sub-domain and html page name in the same way: **/second-hand.html**.

This domain name technique is thrown into sharp focus the more you look at the fiercely competitive search terms where all the stops are being pulled out to get and keep that top rank.

You don't have to worry that people cannot type the url either as you are not asking people to do this, but simply to click on the search engine result. It is quite easy to have a simple domain name for your Web site that is used in e-mails, on letterheads and over the phone when people ask and another

domain name for your promotional activity.

For example, you are a car dealership and have www.johnsmithcars.co.uk as your domain name but www.cars-new-secondhand-uk.co.uk as your promotional domain name, also leading to your site and the one that you actually use to register on the search engines. There is no excuse not to do this, with domain names being available from under £3+ VAT per annum (see below).

Don't be left out in the cold

One of the most important things you can do is to get other sites to link with your site. This has several effects. Search engines will often seem to rate a site more highly if they found it themselves such as through another site. It is also good practice to make sure that links you establish are with useful and popular sites that are themselves already on the search engines.

If you do this, you will get a small amount of traffic by people clicking through in the links but far more importantly you are allowing your site to be found by search engines that you haven't even registered with or who may have not rated you very highly the first time.

You need to do a bit of leg work here and contact similar sites who are not your direct competitors to suggest a mutual link. The thing to remember is that it is not necessarily the visitors from their site that is important it is the fact that someone else has linked to your site. The Internet is a set of Web sites linked together through hyperlinks and if yours is not linked it is not really part of the network. Because this is so important, we have set up a service for our customers to do just this.

I can illustrate this, in two projects recently there has been a marked increase in visitors to the sites due to a link from another important site having been set up. The numbers in one instance went from 500 visitors a week on average to well over 1100 visitors a week to ten pages overall and, in the other, from 1500 visitors per week to 3300 visitors a week (on just eight pages). Both of these are without a doubt in my mind due to the fact that the sites were suddenly found to be linked from another (linked to) site. Both of these large jumps in visitors happened overnight and are not as a result of direct visitors from one site to the other.

We hope this is of some use to you. for more information on all the items spoken about here including where to register, how to do so and free links to useful utilities mentioned are available on our Web site at www.futurecomputers.co.uk/promotion.

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The story so far

The emergence of the Iyonix PC on to the RISC OS scene has certainly made some ripples. Though perhaps USB is one area where fewer ripples than most have occurred.

The main reason for this is that Castle are one of the USB card manufacturers and, perhaps unsurprisingly, the new machine sports USB connectivity. Naturally the application programmer interface to be used will be the Castle one, rather than Simtec's.

This presents something of a dilemma, on the one hand the Simtec API is the better established of the two. It has at least become fairly stable and applications written to use it without falling over.

The computer this article is being written on has been running a wireless and optical USB mouse for the past four weeks without any hitches, likewise the keyboard is running off the USB and has had no problems, apart from the fact that the radio range appears to be considerably less than that quoted at 30cm from mouse to receiver seems about maximum not the suggested 200cm.

By the way it wasn't mentioned in the Simtec card review in the last issue that the mice and keyboard have to be powered with their own batteries. The Logitech packages are supplied with batteries, all of them AA sized.

Anyway back to the review of the current situation. The Simtec card seems stable and works without any problems so far although obviously we haven't plugged in anything except a mouse and keyboard so far. Stuart Tyrrell is supplying USB joysticks for anyone who wants them, though his free hub with any card bought has now finished.

The situation with the Castle API is that it hasn't been stable so no one could come out with any definitive products to go with it. In fact it hasn't been on sale. However the fact that the Simtec interface has been. is rather overshadowed by the forthcoming launch of the Iyonix. Castle must have the USB software for the Iyonix stable at the time of release which could be any time in the next few weeks (no, no one has told me the launch date but the pressure to reach the Christmas market must be overwhelming).

It is often said that in the fight for standards in the computer market that you don't have to be the best, you just have to be the first. But how true will that be now?

It depends purely on the level of take-up of the Iyonix compared to the take up of the Simtec card. The other element that pushes this along is the fight for generic drivers.

There was a serious concern when these cards were first launched that individual manufacturers would tie their drivers into specific models of hardware, which is entirely feasible given the USB protocols.

For example, there is nothing to stop a person creating a printer driver to tie it directly into a Widget 350C printer. The driver will only work with that printer. If the person upgrades to a Widget 351C, the driver might not work.

Why would anyone do this? Because in a market of restricted size the risk of software piracy is going to have a potentially huge effect on the possible sales of a USB product. Better to tie the person in to you and your products, not to supply him with a driver that will work with anything because then he won't come back.

But it turns out that generic drivers for the major classes of USB drivers will most likely be available quite quickly but who will get there first?

The final twist in this arena is the possibility of someone creating wrappers that put a Simtec-like layer on the outside of a Castle interface, or a Castle-like interface on the outside of a Simtec interface. Or both.

Whether this is practical begs a question, there might be some feature of one or other of the interfaces that makes it impossible but someone will undoubtedly try. Of course the new computer has a standard podule interface so there's nothing stopping you plugging a (32-bit compatible) Simtec card into the Iyonix and using that. Assuming your drivers have been written to be 32-bit too.

Printers

The person who has been showing off USB printers at the last nine months of RISC OS shows is Paul Richardson of ExpLAN.

Paul's time is, however, heavily tied up with the Solo project which is more than just a simple technical problem to be sold. You would be surprised at how much politics is involved, the problems caused by this make the technical difficulties pale into insignificance.

But printers are a problem when it comes to USB. The fact is that !Printers is an application that is way past its sell-by date and this is just as true for RISC OS 5 as it is for RISC OS 4, despite the enhancements in 4.

!Printers cannot sensibly handle USB drivers and, as of this date, no commercially available USB printer drivers have been written for either card. This is a potentially serious problem for Castle since the new Iyonix does not have a parallel port for printers.

There are ways around problems like these. For example, at the Acorn User offices we drive network printers via the Appletalk stack written by John Tytgat. We do this by creating a printer driver to create postscript files that are spooled to disc. A second, specially written, application scans the directories and finds postscript files which are then spooled to the printer.

We find this approach to be very versatile as the spooling application has been written to handle multiple printers and multiple directories which can be anywhere on the network.

This spooling will work just as well for USB and, it turns out, that is the current approach of Castle. It is not an ideal solution but the ideal solution requires a complete re-write of the !Printers. This is something that desperately needs to be done. And the sooner the better.

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Part 11: Tracking media

In the last issue we had a good look at how to restore data into the application once we had backed t up. This time we are going to take a jump back to the card validation aspect of the application and how we use the zone registration to intercept actions that we don't want to have happen. If we have space we will add a new zone and look at some application specific problems

So far we have implemented a very crude method of card validation. Whenever the user clicks OK on a record card we enter a routine that checks to see if every important part of the card has been filled in suitably. S-Base does allow a lot of context checking if we choose to use it. However what we want to do here doesn't fall into that realm.

What we want to do is allow the user to have as much liberty as possible when filling in the card and then check it at the end to ensure the fields are filled in.

For example in most cards we have some sort of a name field. It is quite possible not to fill this in, and the system will work perfectly well because there is an invisible ID field for every record which is what the application uses to identify records, not the name.

However for the purposes of the person using the program, they need the name field to be filled in and more importantly it is almost certainly an error not to fill it in.

We have already created a loop and a routine in each zone to check the records as they are created and to keep looping until no errors are generated. However under RISC OS (particularly) the old error box is a liability. It stops everything else as well. This is a multi-tasking environment and something as relatively unimportant as notifying the user that he needs to fill in some fields should not make the machine seize up.

It is quite a simple matter to implement a windows that pops up and lists all the errors in the current record that need to be corrected before it can be saved. And that is another valuable point: We make the window list all the errors, not just indicate with a box one at a time.

Figure I shows the window at work, you should recognise by now that what we have is a card selector into which we simply insert the text of the error message(s) and display.

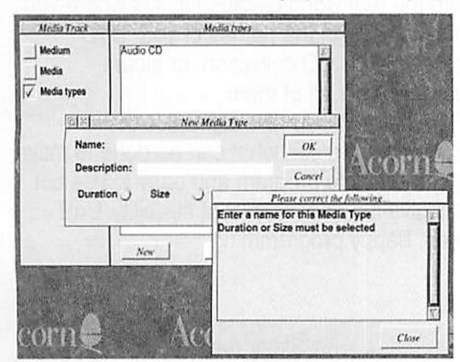


Figure 1

```
def proc mediatype_verified
  local ok=TRUE,eh=proc erl_create(""),zn=mediatype_zonenum
  proc control_zwin_add(zn,eh)

  if (@trim(mediatype.name)="")
      proc erl_add(eh,"Enter a name for this Media Type")
      ok=FALSE
    endif

  if ((mediatype.size=255)||(mediatype.duration=255))
      proc erl_add(eh,"Duration or Size must be selected")
      ok=FALSE
    endif

  if (!ok)
      proc control_zwin_show(zn,eh)
      card poll eh
    endif

  proc control_zwin_remove(zn,eh)
  proc erl_dispose(eh)
  return ok
enddef
```

Figure IIa

Figure IIa shows the main code, this is the card validation routine which was in place before but this time it has been modified to insert the error messages into the selector, which in S-Base is a very simple thing.

Figure IIb shows an additional set of routines created in the "general" procedure resource. We always aim to reduce repetition, and the validation code will probably be repeated in each zone. So we have three routines that will actually create, add to and remove the error list window. Then if we change the way it works we only have to do that in one place throughout the program and it will still work correctly with every zone.

In fact, theoretically, we could have a zone which gets copied from one application to another, and uses this error list but it could be implemented differently in each program and the zone won't mind which, in fact won't have any idea about the differences. This is modular programming in action.

Looking at the code in detail: We start by initialising the ok variable, this is used to determine whether we are actually going to have to display the error window or not.

We create the window and get its handle, we haven't specified a new title for the window, we'll just use the one it has as normal. We also initialise zn to the current number of this zone. We do this only to save on space and typing.

At the end of the initialisation we add this new window to the list of windows that belong to this zone. This is done so that we can make this window appear and disappear along with all the others belonging to this zone.

The next two if..endif blocks are the lines which check to see if the card has been filled in correctly. The first one simply checks to see if a name has been given for this record. An important point to note here is the use of @trim with the file field. The file field is of fixed length and is padded with spaces, this means that even if you haven't typed anything in the file field it contains a string of spaces up to its fixed length.

You have to use the @trim command to strip off the spaces at the end and see if anything is left. If something is left then that will have been typed in. If the remaining length is zero then that means that nothing has been typed in.

The second test is for the radio buttons. If you use the right mouse button to click the icons you can get to a stage where neither is selected. This is not okay so we test for that condition as well. Theoretically S-Base should be able to avoid this problem but for some reason it doesn't so we have to check for it.

If either of these situations has occurred we add the text to the error list window using the routine we have created and set the ok variable to false, indicating that we have to open the window.

And then we do, and poll it until it is closed by clicking on it. We then remove it from the window list for this zone and dispose of it using the routine provided.

There are screen update problems associated with displaying this window and then trying to get rid of it, we handle this in the loop of the _make routine by issuing a card check command.

Preventing deletion

I have said, in a fairly casual way, previously that when we want to delete a record we issue the fact that we are intending to delete it as a message that goes around all the zones that have registered an interest. Any zone that wants to prevent that deletion can do so by returning a FALSE reply as oppose to a TRUE reply.

In this application there is a great deal of dependency between record types, media depends specifically on mediatype for example. So if the user tries to delete a "mediatype" record this could have fairly unfortunate repercussions on the "media" zone records. So, the media zone registers an interest in mediatype zone activities at the beginning.

To look at the actual code we start in the general zone handler which deals with the clicking of zone buttons. In this case we are taking a special interest in Delete.

Figure III is the code located in the zone click handler resource, we have looked at this before but let's just review how it works. The initialisation phase acquires the handle of the bit string that specifies which items in the

```
def proc erl_create(t)
  local h
  card new h,"error list"
  if (t>"") then card set header h,t
  return h
enddef

def proc erl_add(h,s)
  local lh=@elementhandle(h,"list")
  selector insert lh,@ltrim @trim s
enddef

def proc erl_dispose(h)
  card dispose h
enddef
```

Figure IIb

zone list that are selected (none, one or more). The second line finds the query which contains the list of record numbers for each item listed in the zone list. So now we have all the data we need to locate each record that has been selected at the point the user has clicked the delete button.

Next we check how many items have been selected. If it is zero nothing further is done. This situation should never occur because the delete button is greyed out until at least one item in the list is selected. However, as a programmer, I tend to be paranoid about other people's programming and don't usually assume the program will work exactly as expected. Hence the check.

We then pop-up a dialogue box that asks the user whether he really does want to delete the items that have been selected. And only then do we proceed.

The first stage is to invoke the _eval procedure for the current zone. What _eval does is issue the specified procedure to every zone registered with this one. So if we are trying to delete a mediatype record, the media zone will get interrogated with a media_mediatype_predelete procedure call. The parameter to this call is the selected bit string handle and calling zones number.

Now we zip over to the media procedure resource where Figure IV shows the code. We find the handle of the query containing the record numbers and now we use the "bit for" command that calls another routine for every bit that is selected in the bit string.

This routine loads up the record in question, and then uses the appropriate index to see if the ID of this record has been used in a media record. At an early stage we created an index which lists media records according to the ID of the mediatype they are based on. We simply search this index and if just one media record uses this mediatype ID it means that we can't delete that record.

```
  when "delete"
    local sh=@selectedhandle(@elementhandle(@handle,"list"))
    local qh=proc control_getzone_qhandle(curzone)
    if (@bitsetcount(sh))
        if (proc query_delete("Do you really want to delete these records")=QUER
Y_ACTION)
          if @eval("proc "+zname+"_eval(""predelete(sh,curzone)"")")
              bit for sh,"ctrl_del"
              @exec("proc "+zname+"_zonerefill")
            endif
        endif
    endif
```

Figure III

So we issue an appropriate error message, then clear the bit in the selected string (we can do that) and then continue to the next selected record. Often there will be only one that is being deleted so this is fairly efficient.

You will notice in some applications that you often have a tick box, or a button option, which tells the application to suppress further messages. We could enhance our system to do this if we wanted to by creating our own error box. This would have the additional advantage of avoiding the dreaded system errorbox that holds up everything else.

And that is all we need in this case although other zones might need to do more complex checking and might, perhaps, allow the records to be deleted anyway as long as some other action was carried out. Like deleting the dependent records or replacing the dependency with something else.

In my original highly complex relational database shell, every relationship between two types of record had sets of associated flags and this matter of dependency was dealt with automatically by a pair of flags. But we don't need that.

Getting back to the zone click handler, having run through every interested zone we then delete any remaining records in the selected bit string and finally redraw the zone list. All this is carried out independently of the zone where the records are being deleted because the action will be the same in every case.

A further point here is that the _eval routine can be used in two ways. The routine at the zone end has to return a TRUE or FALSE value, if it returns TRUE then processing continues, if FALSE then all deletion would be cancelled. Instead in this case we can remove the records we don't want deleted and still pass control back to the deletion routine. It may happen that by the end of it there are no items left to be deleted but there may be.

Expanding the range

Theoretically we should be able to move along quite fast now, all the basic functions are in place and adding new zones will be easy. However each new zone does present its own challenges plus the limitations that having a preset structure implies will affect the overall design in the end.

The next zone to look at is an actual real ... and that was my initial problem what do I call it? You see it's like this the program is called MediaTrack. The purpose of the program is to allow you to keep track of things recorded on some sort of media, without regard to the type or the type of recording. Obviously, however, in order to be useful the way things are stored and presented does have to meaningful.

Let's look at the type of media and recordings we have: Music on long playing record or single (well I've still got some of those); Music on cassette; Music on CD, as straight Audio CD or as MP3; Moving pictures on DVD, video, VCD; Software on floppy, CD, hard disc, even solid state memory.

Each of these may have an author, or several authors, you might want to store the actor, you will probably want an indication of the type of the recording, for example Moving Pictures might be a thriller, fantasy or home movie, it could have a particular rating or you could aim at the new rating system Mild, Some, Strong or Extreme language, violence or sex (those aren't necessarily the categories and "intensities", I'm improvising).

Can we store all these in one application? Do we want to? Is there a happy compromise?

The answer to question one is yes, of course you can, but it will take a lot of work. Something I leave to the class to complete as an exercise, if you don't want a life.

Question two and three is answered with no, we do want a compromise but I really don't know if it will be a happy one. With any subject, if you have a choice of software to use, there will be at least one that doesn'tÊdo things the way you like. Perhaps none of them will do it the way you like. But much is personal taste.

One thing I am after, in regard to the programming of the application, is flexibility. I want something that I can bend with reasonable ease from one application to another. But that is tricky to achieve in a way that isn't too complicated, I have been to the land of complicated and it was just too much trouble.

```
def proc media_mediatype_predelete(sh,sz)
  local ok=TRUE,mt=mediatype,mm=media
  local sq=proc control_getzone_qhandle(sz)
  bit for sh,"media_mediatype_pd"
  media=mm
  mediatype=mt
  return ok
enddef

def proc media_mediatype_pd(sn)
  load mediatype,@bget(sq,sn)
  if (@find(media,"by mediatype",mediatype.id))
      error 99,"Mediatype '"+@trim(mediatype.name)+"' not deleted, it is in use
by at least one media record"
      bit clear sh,sn
    endif
  return ok
enddef
```

Figure IV

So where does that leave it? A little up in the air to be honest, we will experiment and see what we can come up with.

The first problem

Coming back to the first problem, what on earth do we call the next layer? We have mediatypes and we have media, what generic term covers tapes, discs, CDs, DVDs or whatever? Well it's media isn't it. But we've already used that.

After a lot of thought I had to compromise and I've called the next layer a "medium" I know it's horrible but I justify it by saying that we are looking at a specific instance of a type of media.

A medium will be able to have different things associated with it, but it is our first step into the real world because this is where you will first type in the names of your DVD collection, or CD collection, or album collection. Or all of them.

In the next issue we will tackle the "medium" and see what can be done to make it both easy to program and easy to use but still give it a decent level of flexibility. Until then, happy programming.

Steve Turnbull
Stevet@acornuser.com

BETT - under starter's orders

BETT 2003 will play host to the International final of the F1 Cars in Schools championship. Hundreds of schools from across the UK will be taking part in regional heats with the finals held at BETT on the 8th January. As well as UK teams, competitors are expected from South Africa, Australia, Asia and America.

This event first saw the light of day at BETT 2001 and is sponsored by Denford, BAE and Jaguar. It allows children to use the latest computer-aided design and manufacturing technology equipment to design and virtually race their F1 model cars they have spent the last year creating. Commenting on the competition, Andrew Denford, founder of the challenge, remarked: "We have been overwhelmed by the popularity of F1 in Schools engineering students who take CAD/CAM classes can have fun as well as learn. Where else can you enjoy designing and making something you ultimately get the chance to race?"

Fore more information on the challenge visit the Web site at www.f1inschools.com

DIARY DATE
BETT 2003

When	8-11 January
Where	Kensington Olympia
Contact	EMAP Education - 0207 874 0200

Espress yourself

All 1400 schools across the North East of England are to receive a free, one month trial of the subscription service Espresso when they connect to the Northern Grid for Learning. The schools from twelve LEAs will also benefit from content being created by Espresso in collaboration with the Northern Grid and other Grids across the country.

The Northern Grid is a Regional Broadband Consortium, a new, interactive, regional portal launched in November. As well as promoting the use of existing, high quality material produced by the Northern Grid, it will facilitate the development and sharing of new learning materials. The content will be accessible to teachers, pupils and parents through any Web-enabled computer in the home, the classroom and libraries.

Schools in the area have already had the opportunity to sample the unique Espresso resources in the form of Victorian Times at Beamish, a visit to a living museum. Further projects are under development for Key Stages 2 and 3 and schools connected to the Northern Grid will also benefit from the use of regional resources made in conjunction with other LEAs and Grids across the country.

Click happy

REM are about to launch the second edition of the Click On It brochure. A joint initiative with the National Literacy Association to motivate disaffected children it also hosts demos of the latest software releases.

Promised to be bigger and brighter than the first edition, this version will involve more schools and care homes with this second phases of the project engaging children that are underachieving in literacy due to their circumstances. The eye-catching catalogue contains children's reviews of software packages along with a resume by their teachers/carers as to the impact it has had on their literacy skills.

The idea behind Click On It is to use the medium of ICT as a motivational tool to encourage children in a disadvantaged position and give them the skills they need. To find out more, pop along to www.r-e-m.co.uk or ring 01452 254 726.

World Space week

You may have missed it this year, but put October 4-10 in your 2003 diary. This is now officially assigned the status of annual World Space Week by the UN, and has since 1999!

The aim of the week is to be be "a yearly celebration at international level of the contribution that space science and technology can make to the betterment of the human condition." Find out more at: **www.secuk.org/spaceweek**

Big draw

The Campaign for Drawing and AccessArt have collaborated to create an online drawing resource Drawing Together. Accessible from both the Drawing Power Web site (**www.drawingpower.org.uk**) and the AccessArt site (**www.accessart.org.uk**). Drawing Together aims to engage directly with children and to enthuse and inspire them with ideas which will enable them to explore drawing in a variety of ways. Drawing Together presents ideas through a highly illustrative, animated and interactive digital resource which will appeal to children from the age of 8 years and up.

Taking drawings produced by children from schools across the country, Drawing Together focuses on how we can tell stories through drawings. For children, story telling through drawing is an intuitive process which enables them to make sense of their world and to communicate ideas to others. Story telling through drawing encourages children to visualise and imagine, and then to understand how their personal ideas are read and understood by others.

News sites for children

http://thenewspaper.org.uk/news/index.php3
An online version of a free national children's newspaper for 8 to 14-year olds. Updated fortnightly it is primarily a teaching resource with lesson plans provided for Key Stage 2 and 3 literacy, English and citizenship. The articles and features cover a wide range of topics including home and world news, sport, pop music, science, technology and the environment. There are also opportunities for pupils to contribute stories and express views on issues that concern them.

http://news.bbc.co.uk/cbbcnews/
A children's television news site from the BBC.

www.explore.parliament.uk/
Explore parliament here on a site designed by the Parliamentary Education Unit. It provides a fun and useful introduction to the UK political system for primary and secondary schools children. There are quizzes, puzzles and information about the history and operation of Parliament and details of current debates.

www.whitehouse.gov/kids/index2.html
Crossing the pond this is an educational opportunity for young people to learn about the White House and the US President through fun and exciting features. Keeping up with news of events, other children are built into the site. The themes of reading, making good choices (such as going to school) and dreaming about the future are woven into the site's content through the personification of the President's pets and animals.

Pam Turnbull
educ@acornuser.com

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Notes, staves and all the rest

Researching into ICT and Music I found very few references to anything but computer software, so it's worth emphasising (before delving into the computer specific elements) that ICT here also means: electronic keyboards, sequencers and tape recorders as well as the sound recorder on the computer, the Internet as a source of WAV sound files and multimedia authoring software. Most of these are easy enough to access, apart from the sequencer.

For those not in the know, a sequencer enables blocks of sounds to be entered, either by programming or by playing on a keyboard. These may be manipulated in various ways and repeated, and assigned to different tracks and instruments. Few primary schools have this, but here is where the computer really comes into its own.

For instance, Compose World from ESP (0115 944 4140) serves as an elementary sequencer, enabling children to arrange pre-programmed blocks of sound on a single track. In particular following the QCA scheme of work, Unit 10 states that "the use of rhythmic symbols is an essential aspect of musical development and should be developed in the early part of Key Stage 2". You could make your own flash cards with notational rhythms for Compose World.

So what else is there out there to make your life easier?

Soft options

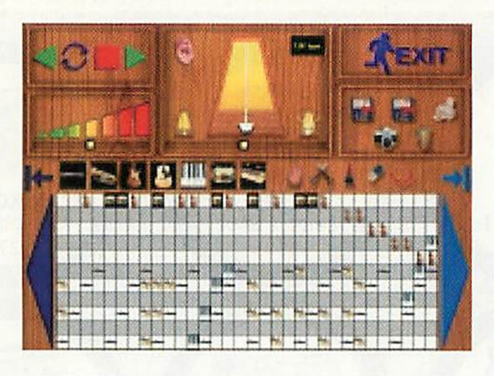
Just Sounds

A collection of sounds to use in programs such as TextEase. All you have to do is drop sound effects into multimedia activities. The sounds are available as .wav files for PC, Amadeus for Acorn and sound files for Macintosh. Sounds are categorised into: Farm (with pigs, sheep, cows, dogs, and so on), Home sounds from the vacuum cleaner to a shutting door, or how about Transport (including engines, trains and buses)

Price: £14.00 each topic
Platform: RISC OS/PC/Mac
Supplier: Granada Learning (0161 827 2927)
Age: Foundation +

Music Box 2

No reading is necessary for children to access this music maker and children can record their creations for others to enjoy. It comes in four parts, Sound Box lets children play and experiment with the



way different instruments sound on a grid of notes; Chord Box challenges children to make up chords from different instruments and to use a sequencer to create accompaniments.

In Bear Box children explore percussion on a time line. All these ideas come together in Tune Box which presents a grid on to which they drag and drop sounds to make tunes from patterns. Some load and print options make this fully configurable.

Price: £44.95
Platform: RISC OS/PC/Mac
Supplier: Topologika (01326 377771)
Ages: 5-11

Lives of the Great Composers

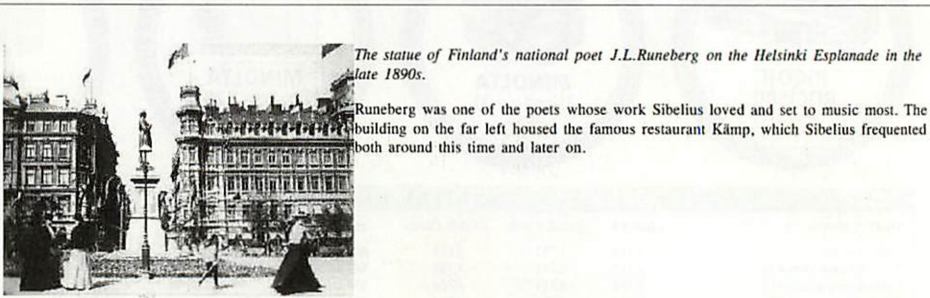


Browser-based software which provides essential background material to enrich the teaching of music by vividly capturing the lives and times of some of the greatest composers. The motivation, character and interests of each composer are set against the social and cultural environment of the historical period in which they lived. The composers featured are: J S Bach, Handel, Mozart, Haydn, Chopin, Beethoven, Wagner, Berlioz, Brahms, Tchaikovsky and Verdi.

Price: £69
Platform: Multi
Supplier: AVP (01291 625439)
Age: KS2+

Sibelius

This incredibly powerful notation program is available as Junior Sibelius for Key Stages 1 and 2 while Sibelius 6 covers



The statue of Finland's national poet J.L.Runeberg on the Helsinki Esplanade in the late 1890s.

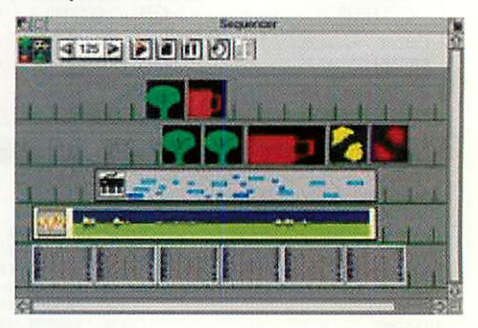
Runeberg was one of the poets whose work Sibelius loved and set to music most. The building on the far left housed the famous restaurant Kämp, which Sibelius frequented both around this time and later on.

Together with premiere performance of the Symphony no. 1 in the spring of 1899, Aténarnes sång (The War Song of the Tyrtaeus) was also performed for the first time. The song was Sibelius's patriotic comment against the harsh Russianization policy of the Czarist regime, and from this moment on Sibelius was to be identifield at the forefront of nationalist feeling.

the National Curriculum Key Stages 3 and 4 and Sibelius 7 Student is for A-level and semi-professional work. The latter is a state-of-the-art version from the Sibelius range while the Optical Manuscript allows you to scan your printed manuscript straight into Sibelius.

Price: from £99
Platform: RISC OS /PC/Mac
Supplier: The Data Store (020 8460 8991)
Ages: KS2+

Compose World



Here short phrases of music are represented as pictures or words and these musical building blocks can be used in any combination, and in any order, to compose a tune of one or more parts. You can use this as a stimulus for creating your own music or for more formalised song writing and singing or to explore musical structure and style.

Price: £56.35
Platform: RISC OS/PC
ESP

/Liquid Silicon: 01592 592265
Ages: KS2+

Anthem
An easy-to-use MIDI sequencing package using object-orientated (phrases of music) song structure that allows for greater flexibility. It can handle standard MIDI files, and comes with a powerful MIDI and Wave sequences, digital audio support for including live sampled recordings as well as playback with real-time effects and music editors.

Price: £70
Platform: RISC OS
Supplier: R-Comp Interactive (01925 755043)
Ages: KS3+

ESP MIDI Synthesiser
This is a General MIDI Synthesiser that provides, in software, the capability to play MIDI-based music on any Acorn RISC OS machine. It can be used with the accompanying player to playback MIDI files which are widely available.

In addition, it will playback from any RISC OS music program that supports MIDI. It also provides MIDI playback from the PC Card for both DOS and Windows applications. The Synthesiser comes with a full General MIDI set of instruments which provides 128 melodic and 50 percussion instruments. This covers a wide range of orchestral sounds as well as sound effects. Additional instruments are available from ESP as well as an Instrument editor to allow you to create new instruments from a variety of different sources.

In order to support the wide range of Acorn machines the Synthesiser can provide different levels of quality and different numbers of notes at one time (polyphony). The higher the quality the lower the note polyphony. This means that you can configure your Synthesiser to suit your requirements of performance versus quality.

An application is provided that enables you to select the instruments that are loaded. You can also set the maximum amount of memory for the Synthesiser to use to store instruments, after which time instruments are loaded from disc as and when they are needed.

Platform: RISC OS
Supplier: ESP /Liquid Silicon: 01592 592265
Ages: KS3+

RISC OS AMPLE
AMPLE is a programming language specially intended for the playback of musical compositions. It provides an alternative way of notating music in text form which is both powerful and comprehensible, combined with the standard features of a programming language such as conditional statements, loops and arithmetic operators.

Originally conceived and implemented by Chris Jordan and David Barnett of Hybrid Technology and introduced as part of the Music 500 digital synthesiser system for the Acorn BBC Micro in the UK. The original version of the language (AMPLE BCE) did not allow compositions of more than modest size to be produced due to memory limitations.

Now there is a fully multitasking GUI-based front-end for the language with MIDI support. RISC OS AMPLE is able to export MIDI files, so your AMPLE compositions can be enjoyed by PC users too!

The textual notation used by AMPLE strips music down to its basic level of pitches, durations and counterpoint. This helps to avoid the increasingly complicated methods that conventional music notation uses to achieve its ends, particularly in the notation of irrational rhythms. This makes AMPLE notation easy to learn compared to conventional notation, and fast for the computer to interpret and perform.

Yet the main advantage of AMPLE notation comes from the fact that it has all the flexibility of a programming language to perform calculations and make decisions on the fly, or in response to some external stimulus such as a keypress or mouseclick. This means that music that contains some element of randomness, or that can be altered during performance, is straightforward to produce on AMPLE.

Most sequencer programs are not flexible enough to do this sort of thing. AMPLE is powerful enough to perform any MIDI-based music that any MIDI sequencer can perform, plus it can do things that no sequencer can do. Best of all, RISC OS AMPLE is freeware.

Price: Freeware
Platform: RISC OS
Supplier: Robin Terry,
www.aquitaine.demon.co.uk

Pam Turnbull
educ@acornuser.com

Web curios

Pontypridd Male Voice Choir
www.malechoir.com
Not perhaps your first port of call, but a very popular site devoted to male voice choirs, and the one in Pontypridd in particular. There are recordings to list to, especially the classical repertoire of the Hallelujah Chorus and Cwm Rhondda.

Sibelius museum
www.abo.fi/fak/hf/musik/sibelius/EN
A classy-looking site featuring all aspects of the life and works of the composer.

World Internet Music Resources
www.music.indiana.edu/music_resources/
This is a huge sites with links sending you far and wide with information on everything from Little Georgie and the Shuffling Hungarians to Frank Zappa and Sibelius. There are pages on all genres from classical composition to groups and ensembles and popular groups. In addition, there are links to sites dealing with performance as well as relevant journals.

Tweenies Song time
www.bbc.co.uk/education/tweenies/songtime/index.shtml
Taking a completely different tack and one aimed the Foundation Stage is an A-Y of songs for younger children. Just click on d and you can choose from Dingle Dangle Scarecrow to Dot to Dot. There are 12 songs in all and you can print out the words, see the Tweenies dancing and if you don't like the sound of your own voice, you can download the real audio file or download the mp3 file.

Beethoven
http://raptusassociation.org/index.html
Another information site on a classical composer. A wordy self-important site but one which contains a lot of useful information.

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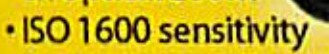


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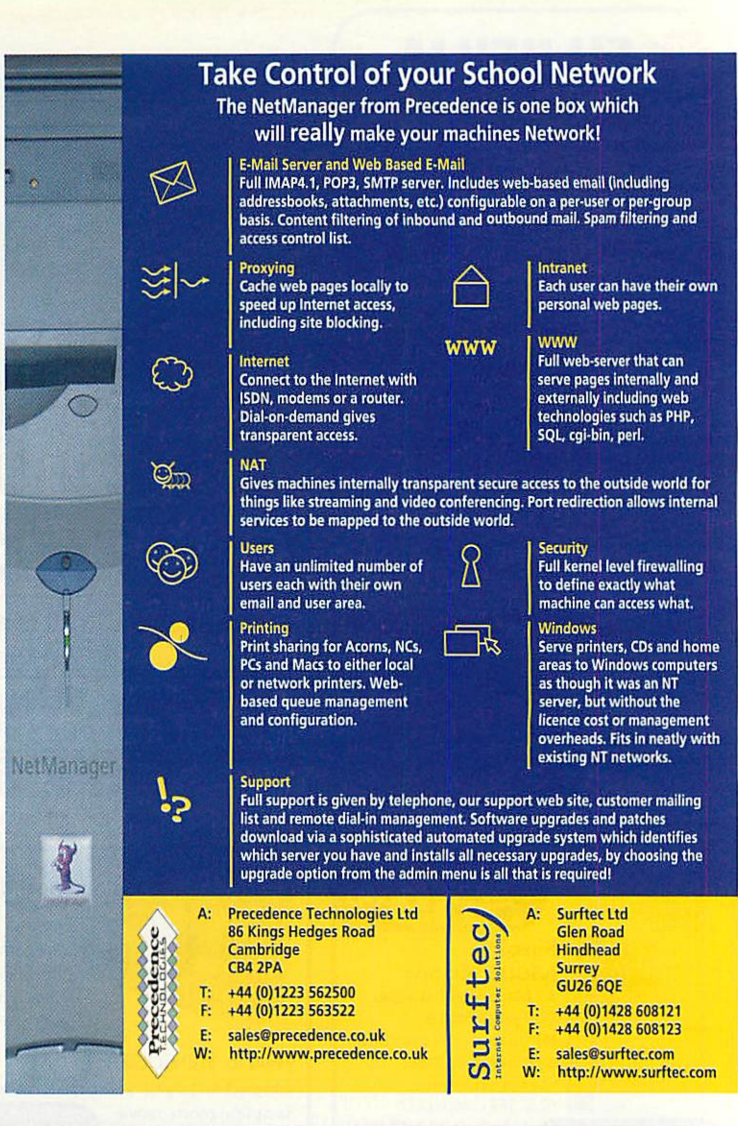


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Viral messaging

Many companies now have a signature attachment to their e-mails which say they take no responsibility for any virus added either knowingly or unknowingly to any e-mail they send out, requested or otherwise. If that's legal why can we not send our e-mails with the requirement that no reply can be sent unless it is guaranteed virus free?

I only ask this because I have been the recipient of a deluge of e-mails from one source which have nothing in them. The source seems completely unconcerned. As i understand it the fact that they are using a Windows system means I am effectively protected since, I am told, viruses cannot jump between platforms. But for how much longer will that be the case?

Elwyn Morris
Harwich

While I am certainly not in a position to comment on the legality of such disclaimers, it is of course also a question of legal "in which country"? Something of that nature may be legal in one country but not in another and the Internet transcends national boundaries.

Taking a real world example, if I have the flu and I insist on going to work, then others catch it, who is liable? Me, for putting others in the position where they can catch it? Them, for not being careful around me? Or no one. Alternatively is a Typhoid carrier responsible for deaths caused unknowingly?

Tricky questions without easy answers, until someone makes a legal decision. In fact we don't even know if these things are legal at all.

As for viruses themselves that's a much easier matter to deal with. A RISC OS computer is not (repeat not) subject to PC or Mac viruses. There is no "jumping the species". Ever. A computer virus is a computer program that is written by a person it doesn't mutate on its own, only as far as the programmer thought he could write it.

Having said that there is just one situation where I believe it could occur and the author has already been warned of the problem and taken steps to ensure it doesn't happen. And I'm saying no more than that.

Networks with added CITRIX

In the last Acorn User I was interested in the request from Mike Gilbert for CITRIX help. I have about 30 Acorns operating with Citrix and have been much frustrated by the lack of colour options that prevent me from making good use of the DATA CADCAM in Educaion initiative since ProCAD won't work with a 256 colour limit and Artcam will after a fashion but will not produce the right sort of files to work our simple cutter.

In fact I have recently decided that without this upgrade, I will have to move to PC thin clients, a move I don't really want to make. So here's hoping.

Chris Cook
by e-mail

Easy memory

The easy memory gadget is fine of course, but without USB most people can't use it. However, a similar option is actually available for many Acorn users:

1. If you have a Psion5 with Compact flash. Simply download your vital files onto a space on Drive D. If need be get a bigger value compact Flash card.

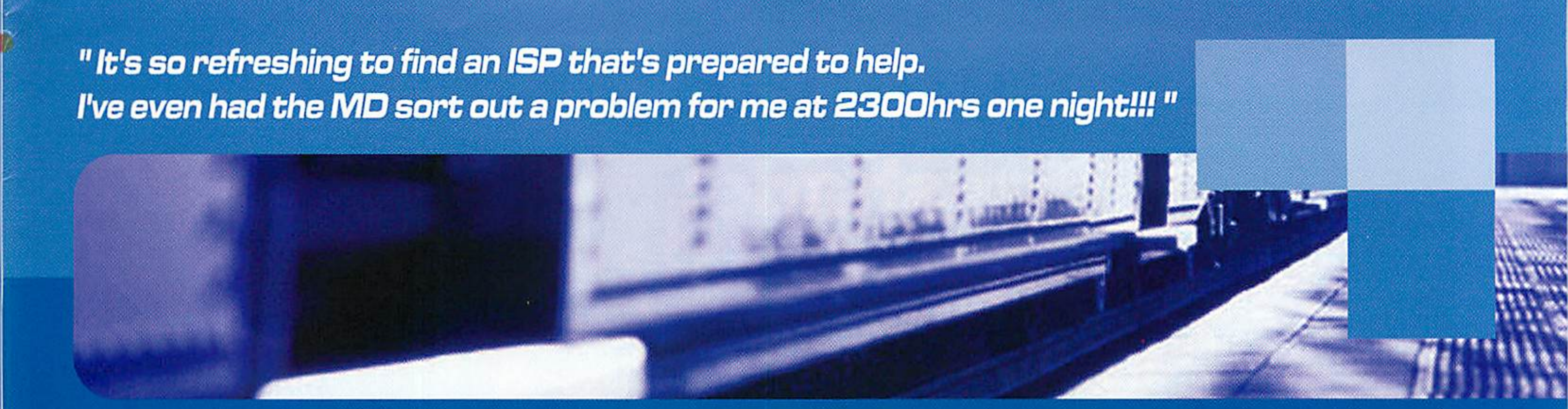
2. If you use FlashFS or SmartFS, similarly, simply use a card to dowload your vital data.

I happen to have both facilities and use a 256Mb compact flash card in its little plastic box as part of my backup strategy.

I keep it in my wallet.

And, as a slight bonus, total weight 15gm which is a huge 2.5gm lighter than easy memory.

Philip Foster
St Matthew Publishing
Cambridge


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- Twain and PC software
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